

A
DISCOVERY
OF
Gem Hoaxes.

From the FRENCH.

Made ENGLISH
By Mrs. A. BEHN.

To which is prefixed a PREFACE,
by way of ESSAY on Translated
PROSE; wherein the Arguments
of Father Targem and others, against
the System of Translations (as to the
Detection of the Error) are likewise
considered, and answered: Wholly
NEW.

L O N D O N,

Printed for William Canning, at his Shop
in the Temple-Church, 1688.

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MADE ENGLISH

BY MISS A. B. E. H. T.

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NEW

LONDON,

Printed for William Canning, at his Shop
in the Temple Church, 1683.

Jones 29 Oct 1681
 Genl R. B. W. G. to D. B. G. = 1681

To the Right Honourable,
 William, Earl of Drum-
 langrig, Eldest Son to his
 Grace, William, Duke of
 Queensberry; and one of
 his Majesty's most Honou-
 rable Privy-Council in the
 Kingdom of Scotland.

My Lord,

THe Esteem I have for
 your Nation in general,
 and the great Veneration
 I am obliged to have for some par-
 ticular Persons of Quality of it, has
 made me ambitious of being
 known to all those of Wit and

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The Epistle

fine Parts. Amongst that Number, none has a greater Character than your Lordship, whose early Knowledge of all that is excellent in Learning, and of all the Graces of the Mind, promised the World that accomplished Great Man, it now with so much Pride and Satisfaction beholds; and which, even without the addition of your illustrious Birth, were sufficient, to gain you the Esteem of all Mankind; and you are never mentioned, but with such vast Accumulations of Praise, as are given only to *uncommon Men*, and such, as something extraordinary alone can merit.

To all your advantages of Nature, elevated Birth, Virtue, Knowledge, Wit, Youth, and Honours, to compleat your Happiness,

Dedicatory.

piness, Fortune has added her part too ; and has ally'd your Lordship by Marriage to the Great and Noble Family of *Burlington* , which has at once been honour'd with more Earls than any great Family cou'd ever boast, and whose Vertues, and Loyalty, deserve particular and lasting Trophies to celebrate them to Posterity.

My Lord, I presume to dedicate this little Book to your Lordship, which I ventured to translate, because it pleased me in the *French* ; and tho but a trifle, has something in it out of the way of ordinary *Wit* , which renders it more worthy to be laid at your Lordships Feet. If it is not done with that exactness it merits, I hope your Lordship will pardon it in a *Woman*, who is not supposed

The Epistle, &c.

to be well versed in the Terms of Philosophy, being but a new beginner in that Science ; but where I have failed, your Lordship's Judgment can supply ; and if it finds acceptance with your Lordship, I am already so much a Philosopher, as to despise what the *World* says of it, and will pride my self only in being,

My Lord,

Your Lordship's most humble

and most obedient Servant,

A. Behn.

The Translator's

PREFACE.

THE General Applause this little Book of the Plurality of Worlds has met with, both in France and England in the Original, made me attempt to translate it into English. The Reputation of the Author, (who is the same, who writ the Dialogues of the Dead) the Novelty of the Subject in vulgar Languages, and the Authors introducing a Woman as one of the speakers in these five Discourses, were further Motives for me to undertake this little work ; for I thought an English Woman might adventure to translate any thing, a French Woman may be supposed to have spoken : But when I had made a Tryal, I found the Task not so easie as I believed at first : Therefore, before I say any thing, either of the Design of the Author, or of the Book it self, give me

A 4 leave

The Translator's Preface.

Leave to say something of Translation of Prose in general: As for Translation of Verse, nothing can be added to that Incomparable Essay of the late Earl of Roscommon, the nearer the Idioms or turn of the Phrase of two Languages agree, 'tis the easier to translate one into the other. The Italian, Spanish and French, are all three at best Corruptions of the Latin, with the mixture of Gothick, Arabick and Gaulish Words. The Italian, as it is nearest the Latin, is also nearest the English: For its mixture being composed of Latin, and the Language of the Goths, Vandals, and other Northern Nations, who over-ran the Roman Empire, and conquer'd its Language with its Provinces, most of these Northern Nations spoke the Teutonick or Dialects of it, of which the English is one also; and that's the Reason, that the English and Italian learn the Language of one another sooner than any other; because not only the Phrase, but the Accent of both do very much agree, the Spanish is next of kin to the English, for almost the same Reason: Because the Goths and Vandals having over-run Africk, and kept Possession of it for some hundred
of

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of Tears, where mixing with the Moors, no doubt, gave them a great Tincture of their Tongue. These Moors afterwards invaded and conquered Spain; besides Spain was before that also invaded and conquered by the Goths, who possessed it long after the time of the two Sons of Theodosius the Great, Arcadus and Honorius. The French, as it is most remote from the Latin, so the Phrase and Accent differ most from the English: It may be, it is more agreeable with the Welsh, which is near a-kin to the Basbritton and Biscagne Languages, which is derived from the old Celtick Tongue, the first that was spoken amongst the Ancient Gauls, who descended from the Celts.

The French therefore is of all the hardest to translate into English. For Proof of this, there are other Reasons also. And first, the nearer the Genius and Humour of two Nations agree, the Idioms of their Speech are the nearer; and every Body knows there is more Affinity between the English and Italian People, than the English and the French, as to their Humours; and for that Reason, and for what I have said before, it is very difficult to translate
Spanish

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Spanish into French ; and I believe hardly possible to translate French into Dutch. The second Reason is, the Italian Language is the same now it was some hundred of Years ago, so is the Spanish, not only as to the Phrase, but even as to the Words and Orthography ; whereas the French Language has suffered more Changes this hundred Years past, since Francis the first, than the Fashions of their Cloths and Ribbons, in Phrase, Words and Orthography. So that I am confident a French Man a hundred Years hence will no more understand an old Edition of Froissard's History, than he will understand Arabick. I confess the French Arms, Money and Intrigues have made their Language very universal of late, for this they are to be commended: It is an Accident, which they owe to the greatness of their King and their own Industry ; and it may fall out hereafter to be otherwise. A third Reason is as I said before, that the French being a Corruption of the Latin, French Authors take a liberty to borrow whatever Word they want from the Latin, without farther Ceremony, especially when they treat of Sciences. This the English do
not

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not do, but at second hand from the French. It is Modish to Ape the French in every thing: Therefore, we not only naturalize their words, but words they steal from other Languages. I wish in this and several other things, we had a little more of the Italian and Spanish Humour, and did not chop and change our Language, as we do our Cloths, at the Pleasure of every French Tailor.

In translating French into English, most People are very cautious and unwilling to print a French Word at first out of a new Book, till Use has rendered it more familiar to us; and therefore it runs a little rough in English, to express one French Word, by two or three of ours; and thus much, as to the Ease and Difficulty of translating these Languages in general: But, as to the French in particular, it has as many Advantages of the English, as to the Sound, as ours has of the French, as to the Signification; which is another Argument of the different Genius of the two Nations. Almost all the Relatives, Articles, and Pronouns in the French Language, end in Vowels, and are written with two or three Letters. Many of their
words

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words begin with Vowels; so, that when a word after a Relative, Pronoun or Article, ends with a Vowel, and begins with another, they admit of their beloved Figure Apostrophe, and cut off the first Vowel. This they do to shun an ill sound; and they are so musical as to that, that they will go against all the Rules of Sense and Grammar, rather than fail; as for Example, speaking of a Man's Wife they say, son Epouse; whereas in Grammar, it ought to be sa Epouse; but this would throw a French-Man into a Fit of a Fever, to hear one say, by way of Apostrophe S' Epouse, as this makes their Language to run smoother, so by this they express several Words very shortly, as qu'entend je, in English, what do I hear? In this Example, three words have the Sound but of one, for Sound prevails with them in the beginning, middle and end. Secondly, their words generally end in Vowels, or if they do not, they do not pronounce the Consonant, for the most part, unless there be two together, or that the next word begins with a Vowel Thirdly, by the help of their Relatives, they can shortly, and with ease resume a long Preceding Sentence, in two

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or three short words ; these are the Advantages of the French Tongue, all which they borrow from the Latin. But as the French do not value a plain Suit without a Garniture, they are not satisfied with the Advantages they have ; but confound their own Language with needless Repetitions and Tautologies ; and by a certain Rhetorical Figure, peculiar to themselves, imply twenty Lines, to express what an English Man would say, with more Ease and Sense in five ; and this is the great Misfortune of translating French into English : If one endeavours to make it English Standard, it is no Translation. If one follows their Flourishes and Embroideries, it is worse than French Tinsel. But these defects are only comparatively, in respect of English: And I do not say this so much, to condemn the French, as to praise our own Mother-Tongue, for what we think a Deformity, they may think a Perfection; as the Negroes of Guinney think us as ugly, as we think them: But to return to my present Translation.

I have endeavoured to give you the true meaning of the Author, and have kept as near his Words as was possible ; I was necessitated to add a little in some places, otherwise

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otherwise the Book could not have been understood. I have used all along the Latin Word Axis, which is Axle-tree in English, which I did not think so proper a Word in a Treatise of this nature; but 'tis what is generally understood by every Body. There is another Word in the two last Nights, which was very uneasie to me, and the more so for that it was so often repeated, which is Tourbillion, which signifies commonly a Whirl-wind; but Monsieur Des Chartes understands it in a more general sense, and I call it a Whirling; the Author hath given a very good Definition of it, and I need say no more, but that I retain the Word unwillingly, in regard of what I have said in the beginning of this Preface.

I know a Character of the Book will be expected from me, and I am obliged to give it to satisfy my self for being at the pains to translate it, but I wish with all my heart I could forbear it; for I have that Value for the ingenious French Author, that I am sorry I must write what some may understand to be a Satyr against him. The Design of the Author is to treat of this part of Natural Philosophy in a more familiar Way than any other hath done, and to make every body

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dy understand him : For this End, he introduceth a Woman of Quality as one of the Speakers in these five Discourses, whom he feigns never to have heard of any such thing as Philosophy before. How well he hath performed his Undertaking you will best judge when you have perused the Book: But if you would know before-hand my Thoughts, I must tell you freely, he hath failed in his Design; for endeavouring to render this part of Natural Philosophy familiar, he hath turned it into Ridicule; he hath pushed his wild Notion of the Plurality of Worlds to that height of Extravagancy, that he most certainly will confound those Readers, who have not Judgment and Wit to distinguish between what is truly solid (or, at least, probable) and what is trifling and airy: and there is no less Skill and Understanding required in this, than in comprehending the whole Subject he treats of. And for his Lady Marquiese, he makes her say a great many very silly things, tho' sometimes she makes Observations so learned, that the greatest Philosophers in Europe could make no better. His way of Arguing is extreamly fine, and his Examples and Comparisons are for the most part extraordinary

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extraordinary, just, natural, and lofty, if he had not concluded with that of a Rose, which is very irregular. The whole Book is very unequal; the first, fourth, and the beginning of the fifth Discourses are incomparably the best. He ascribes all to Nature, and says not a Word of God Almighty, from the Beginning to the End; so that one would almost take him to be a Pagan. He endeavours chiefly two things; one is, that there are thousands of Worlds inhabited by Animals, besides our Earth, and hath urged this Fancy too far: I shall not presume to defend his Opinion, but one may make a very good use of many things he hath expressed very finely, in endeavouring to assist his wild Fancy; for he gives a magnificent Idea of the vastness of the Universe, and of the almighty and infinite Power of the Creator, to be comprehended by the meanest Capacity. This he proves judiciously, by the Appearances and Distances of the Planets and fixed Stars; and if he had let alone his learned Men, Philosophical Transactions, and Telescopes in the Planet Jupiter, and his Inhabitants not only there, but in all the fixed Stars, and even in the Milky-Way, and only stuck to the greatness of the Universe,

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niverse, he had deserved much more Praise.

The other thing he endeavours to defend and assert, is, the System of Copernicus. As to this, I cannot but take his part as far as a Woman's Reasoning can go. I shall not venture upon the Astronomical part; but leave that to the Mathematicians; but because I know, that when this Opinion of Copernicus (as to the Motion of the Earth, and the Sun's being fixed in the Centre of the Universe, without any other Motion, but upon his own Axis) was first heard of in the World, those who neither understood the old System of Ptolemy, nor the new one of Copernicus, said, That this new Opinion was expressly contrary to the holy Scriptures, and therefore not to be embraced; nay, it was condemned as Heretical upon the same Account: After it had been examined by the best Mathematicians in Europe, and that they found it answered all the Phænomena's and Motions of the Spheres and Stars better than the System of Ptolemy; that it was plainer, and not so perplexing and confused as the old Opinion; several of these learned Men therefore embraced this; but those that held out, when they saw all

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Arguments

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Arguments against Copernicus would not do, they had recourse to what I said before, that this System was expressly against the holy Scriptures. Amongst this Number is the learned Father Tacquit, a Jesuite; who, I am told, has writ a large Course of Mathematicks, and particularly, of Astronomy, which is deservedly much esteemed. In the end of this Treatise, he cites several Texts of Scripture; and particularly, the 19th. Psalm, And the Sun standing still at the Command of Joshua. If I can make it appear, that this Text of Scripture is, at least, as much for Copernicus as Ptolemy, I hope it will not be unacceptable to my Readers: Therefore, with all due Reverence and Respect to the Word of God, I hope I may be allowed to say, that the design of the Bible was not to instruct Mankind in Astronomy, Geometry, or Chronology, but in the Law of God, to lead us to Eternal Life; and the Spirit of God has been so condescending to our Weakness, that through the whole Bible, when any thing of that kind is mentioned, the Expressions are always turned to fit our Capacities, and to fit the common Acceptance, or Appearances of things to the Vulgar. As to Astro-
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nomy, I shall reserve that to the last, and shall begin with Geometry; and though I could give many Instances of all three, yet I shall give but one or two at most. The Measure and Dimensions of Solomon's Molten Brass Sea in 1 King. 7. 23. the Words are these, And he made a molten Sea, ten Cubits from one brim to the other, it was round all about, and his heighth was five Cubits, and a Line of thirty Cubits did compass it round about: That is to say, the Diameter of this Vessel was a Third of its Circumference: This is indeed commonly understood to be so, but is far from a Geometrical Exactness, and will not hold to a Mathematical Demonstration, as to the just Proportion between the Diameter and Circumference of a Circle. In the next place, as to Chronology, I could give many Instances out of the Bible, but shall only name two that are very apparent, and easie to be understood by the meanest Capacity. See 1 King. 6. 1. the Words are these, And it came to pass, in the four hundred and fourscorth Year after the Children of Israel were come out of the Land of Egypt, in the fourth Year of Solomon's Reign over Israel, in the Month Zif, which is the se-

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cond Month, he began to build the House of the Lord. *Compare this Text, and number of Tears with Act. 13. 17, 18, 19, 20, 21, 22. which is the beginning of St. Paul's Sermon to the Jews of Antioch, and the number of Tears therein contained: The Words are these,*

Ver. 17. The God of this People of *Israel* chose our Fathers, and exalted the People when they dwelt as Strangers in the Land of *Egypt*, and with an high Hand brought he them out of it.

Ver. 18. And about the time of forty Years suffered he their Manners in the Wilderness.

Ver. 19. And when he had destroyed seven Nations in the Land of *Canaan*, he divided their Land to them by Lot.

Ver. 20. And after that, he gave unto them Judges, about the space of four hundred and fifty Years, until *Samuel* the Prophet.

Ver. 21. And afterwards they desired a King, and God gave them *Saul*, the Son of *Kish*, a Man of the Tribe of *Benjamin*, for the space of forty Years.

Ver. 22. And when he had removed him, he raised up unto them *David* to be their King.

King

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King David the Prophet reigned seven Tears in Hebron, and thirty three Tears in Jerusalem ; and for this see 1 King. 2. 11. To this you must add the first three Tears of his Son Solomon, according to the Text I have cited, in 1 King. 6. 1. Put all these Numbers together, which are contained in St. Paul's Sermon at Antioch, with the Reign of King David, the first three Tears of Solomon, and seven Tears of Joshua's Government, before the Land was divided by Lot, which is expressly set down in Act. 13. 19. the number of the Tears will run thus : Forty Tears in the Wilderness, the seven Tears of Joshua, before the dividing the Land by Lot ; from thence, till Samuel, four hundred and fifty Tears ; forty Tears for the Reign of Saul, forty Tears for the Reign of David, and the first three Tears of Solomon ; all these Numbers added together, make five hundred and eighty Tears ; which Computation differs an hundred Tears from that in 1 King. 6. 1. which is but four hundred and eighty. It is not my present Business to reconcile this difference ; but I can easily do it ; if any Body think it worth their Pains to quarrel with my Boldness, I am able to defend my self.

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The second Instance is, as to the Reign of King Solomon; for this, see 1 King. 11. 42. where it is said, he reigned but forty Years over Israel. Josephus says expressly, in the third Chapter of his eighth Book of Antiquities, that King Solomon reigned eighty Years, and died at the Age of ninety four. I would not presume to name this famous Historian in contradiction to the Holy Scriptures, if it were not easie to prove by the Scriptures, that Solomon reigned almost twice forty Years. The Greek Version of the Bible, called commonly the Septuagint or seventy two Interpreters has it most expressly in 3 King. 2. But the first Book of Kings according to our Translation in English, says, that Solomon sat upon the Throne of his Father David, when he was twelve Years of Age. But for Confirmation, be pleas'd to see 1 Chr. 22. 5. and 29. 1. where it is said, that Solomon was but young and tender for so great a work, as the building of the Temple. Rehoboam the Son of Solomon was forty one Years old, when he began to reign, see 1 King. 14. 21. How was it possible then that Solomon could beget a Son, when he was but a Child

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Child himself, or of eleven Tears of Age according to the Septuagint? This Difficulty did strangely surprise a Primitive Bishop, by Name, Vitalis, who proposed this Doubt to St. Jerome, who was strangely put to it to return an Answer; and the Learned Holy Father is forc'd at last to say, that the Letter of the Scripture does often kill, but the Spirit enlivens. The Difficulty is still greater than what Vitalis proposed to St. Jerome in his Epistle. Rehoboam was the Son of Naamah an Ammonitish, stranger Woman, as you may see in 1 King. 14. 31. Now it is clear, that Solomon did not abandon the Law of God, nor give himself to strange Women till the end of his Reign, see 1 King. 9. where he had so many strange Wives and Concubines, besides his lawful Queen, the King of Egypt's Daughter; and I hope this will convince any rational Man, that the Scripture names only the first forty Tears of the Reign of King Solomon, which was the time, wherein he did what was Right in the Sight of the Lord; which I think is Demonstration, that the Holy Scripture was not designed, to teach Mankind Geometry, or instruct them in Chronology.

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The Learned Anthony Godean, Lord and Bishop of Venice, seems to have been sensible of this great Difficulty; for in his Learned Church-History, his Epitome from Adam to Jesus Christ, writing the Life of Solomon, he says, he was twenty three Years old when he began his Reign. Upon what Grounds, or from what Authority I know not; but this agrees better with the Age of Solomon's Son Rehoboam; but it doth not remove the Difficulty, so well as what I have said.

I come now in the last place to perform what I undertook, which is to prove, that the Scripture was not designed to teach us Astronomy, no more than Geometry or Chronology: And to make it appear that the two Texts cited by Father Tacquet, viz. that of Psal. 19. 4, 5, 6. and Josh. 10. 12, &c. are at least as much for Copernicus his System, as they are for Ptolemy's. The Words of the 19th. Psalm are, In them hath he set a Tabernacle for the Sun, which is as a Bridegroom coming out of his Chamber; and rejoices as a strong Man to run his Race, &c.

That these words are Allegorical is most plain

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plain. Does not the Word Set import Stability, Fix'dness and Rest, as much as the Words run his Race, and come forth of his Chamber, do signifie motion or turning round? Do not the Words Tabernacle and Chamber express Places of Rest and Stability? And why may not I safely believe, that this makes for the Opinion of Copernicus, as well as for that of Ptolemy? For the Words of the Scriptures favour one Opinion as much as the other. The Texts of the Suns standing still at the Command of Joshua, are yet plainer for Copernicus, in Josh. 10. and the latter part of v. 12. the Words are these. Sun stand thou still on Gibeon, and thou Moon on the Valley of Ajalon, &c.

The best Edition of the English Bible, which is printed in a small Folio by Buck, in Cambridge, has an Asterism at the Word stand, and renders it in the Margin, from the Hebrew, Be thou silent: If it be so in the Hebrew, be thou silent makes as much for the Motion of the Earth, according to Copernicus, as for the Motion of the Sun according to Ptolemy, but not to criticize upon Words, consider this miraculous Passage, not only the Sun is commâded to stand

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stand still, but the Moon also, And thou Moon on the Valley of Ajalon. The Reason the Sun was commanded to stand still, was to the end the Children of Israel might have Light to guide them, to destroy their Enemies. Now when by this Miracle they had the Light of the Sun, of what Advantage could the Moon be to them? Why was she commanded to stand still upon the Valley of Ajalon? Besides, be pleased to consider, the Holy Land is but a very little Country or Province: The Valley of Ajalon is very near Gibeon, where Joshua spoke to both Sun and Moon together to stand still above, in Places so near each other, it is Demonstration, that the Moon was at that time very near the Sun; and by Consequence was at that time either a day or two before her change, or a day or two at most after new Moon; and then she is nearer to the Body of the Sun, as to appearance, so could not assist the Children of Israel with Light, having so little of her own: It was then for some other Reason that the Moon stood still; and for some other Reason that it is taken notice of in Holy Scripture. Both Systems agree that the Moon is the nearest Planets to the Earth,
and

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and subservient to it, to enlighten it, during the Night, in Absence of the Sun. Besides this, the Moon has other strange Effects, not only on the Earth it self, but upon all the living Creatures that inhabit it; many of them are invisible, and as yet unknown to Mankind; some of them are most apparent; and above all, her wonderful Influence over the ebbing and flowing of the Sea, at such regular Times and Seasons, if not interrupted by the Accident of some Storm, or great Wind. We know of no Relation or Corresponding between the Sun and the Moon, unless it be what is common with all the rest of the Planets, that the Moon receives her Light from the Sun, which she restores again by Reflection. If the Sun did move, according to the System of Ptolemy, where was the necessity of the Moon's standing still? For if the Moon had gone on her Course, where was the Loss or Disorder in Nature? She having, as I demonstrated before, so little Light, being so very near her Change, would have recovered her Loss at the next Appearance of the Sun, and the Earth could have suffered nothing by the Accident; whereas the Earth moving at the same

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same time, in an Annual and Diurnal Course, according to the System of Copernicus, would have occasioned such a Disorder and Confusion in Nature, that nothing less than two or three new Miracles, all as great as the first, could have set the World in Order again: The regular Ebbings and Flowings of the Sea must have been interrupted, as also the Appearing of the Sun in the Horizon, besides many other Inconveniences in Nature; as, the Eclipses of the Sun and Moon, which are now so regular, that an Astronomer could tell you to a Minute, what Eclipses will be for thousands of Years to come, both of Sun and Moon; when, and in what Climates they will be visible, and how long they will last, how many Degrees and Digits of those two great Luminaries will be obscured. So that I doubt not but when this stupendious Miracle was performed by the Almighty and Infinite Power of God, his omnipotent Arm did in an Instant stop the Course of Nature, and the whole Frame of the Universe was at a stand, though the Sun and Moon be only named, being, to vulgar Appearance, the two great Luminaries that govern the Universe. This was the space of a Day in
Time,

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Time, yet can be called no part of Time, since Time and Nature are always in motion, and this Day was a stop of that Course. What is there in all this wonderful stop of Time, that is not as strong for the System of Copernicus, as for that of Ptolemy? And why does my Belief of the Motion of the Earth, and the Rest of the Sun contradict the holy Scriptures? Am not I as much obliged to believe that the Sun lodges in a Tabernacle? (as in Psal. 19.) Are not all these Allegorical Sayings? In the above-named Edition of the English Bible of Buck's at Cambridge, see Isa. 8. 38. where the Shadow returned ten Degrees backwards, as a Sign of King Hezekiah's Recovery, and there follow these Words, And the Sun returned ten Degrees; but on the Margin you will find it from the Hebrew, The Shadow returned ten Degrees by the Sun; and this is yet as much for Copernicus as Ptolemy. Whether God Almighty added ten Degrees or Hours to that Day, or by another kind of Miracle, made the Shadow to return upon the Dial of Ahaz, I will not presume to determine; but still you see the Hebrew is most agreeable to the new System of Copernicus.

Thus

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Thus I hope I have performed my Undertaking, in making it appear, that the holy Scriptures, in things that are not material to the Salvation of Mankind, do altogether condescend to the vulgar Capacity; and that these two Texts of Psal. 19. and Josh. 10. are as much for Copernicus as against him. I hope none will think my Undertaking too bold, in making so much use of the Scripture, on such an Occasion. I have a Precedent, much esteemed by all ingenious Men; that is, Mr. Burnet's Book of Paradise, and Antedeluvian World, which ineroaches as much, if not more, on the holy Scriptures. But I have another Reason for saying so much of the Scriptures at this time: We live in an Age, wherein many believe nothing contained in that holy Book, others turn it into Ridicule: Some use it only for Mischief, and as a Foundation and Ground for Rebellion: Some keep close to the Literal Sense, and others give the Word of God only that Meaning, and Sense that pleases their own Humours, or suits best their present Purpose and Interest. As I quoted an Epistle of St. Jerome to Vitalis before, where that great Father says, that the Letter kills, but the Spirit enlivens;

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enlivens; I think it is the Duty of all good Christians to acquiesce in the Opinion and Decrees of the Church of Christ, in whom dwells the Spirit of God, which enlightens us to Matters of Religion and Faith; and as to other things contained in the Holy Scriptures relating to Astronomy, Geometry, Chronology, or other liberal Sciences, we leave those Points to the Opinion of the Learned, who by comparing the several Copies, Translations, Versions, and Editions of the Bible, are best able to reconcile any apparent Differences; and this with all Submission to the Canons of General Councils, and Decrees of the Church. For the School-men agitate and delate many things of a higher Nature, than the Standing still, or the Motion of the Sun or the Earth. And therefore, I hope my Readers will be so just as to think, I intend no Reflection on Religion by this Essay; which being no Matter of Faith, is free for every one to believe, or not believe, as they please. I have adventur'd to say nothing, but from good Authority: And as this is approved of by the World, I may hereafter venture to publish somewhat may be more useful to the Publick. I shall conclude

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conclude therefore with some few Lines, as to my present Translation.

I have laid the Scene at Paris, where the Original was writ ; and have translated the Book near the Words of the Author. I have made bold to correct a Fault of the French Copy, as to the height of our Air or Sphere of Activity of the Earth, which the French Copy makes twenty or thirty Leagues, I call it two or three, because sure this was a Fault of the Printer, and not a mistake of the Author. For Monsieur Des Cartes, and Monsieur Rohalt, both assert it to be but two or three Leagues. I thought Paris and St. Denis fitter to be made use of as Examples, to compare the Earth and the Moon to, than London and Greenwich; because St. Denis having several Steeples and Walls, is more like Paris, than Greenwich is to London. Greenwich has no Walls, and but one very low Steeple, not to be seen from the Monument without a Prospective Glass. And I resolv'd either to give you the French Book into English, or to give you the subject quite changed and made my own; but having neither health nor leisure for the last I offer you the first such as it is.

The

The Author's

PREFACE.

I Find my self reduced almost to the same Condition in which *Cicero* was, when he undertook to put Matters of Philosophy into Latin ; which, till that time, had never been treated of, but in Greek. He tells us, it would be said, his Works would be unprofitable, since those who loved Philosophy, having already taken the pains to find it in the Greek, would neglect, after that, to read it again in Latin (that not being the Original ;) and that those who did not care for Philosophy, would not seek it, either in the Latin, or the Greek. But to this *Cicero* himself answers; and says, That those who were not Philosophers would be tempted to the Reading of it, by the Facility they Would find in its being in the Latin Tongue ; and that those who were Phi-
b losophers

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losophers would be curious enough to see how well it had been turned from the Greek to the Latin.

Cicero had reason to answer in this manner ; the Excellency of his Genius, and the great Reputation he had already acquired sufficiently defend this new Undertaking of his, which he had dedicated to the benefit of the Publick. For my part, I am far from offering at any Defence for this of mine, though the Enterprize be the same ; for I would treat of Philosophy in a manner altogether unphilosophical, and have endeavoured to bring it to a Point not too rough and harsh for the Capacity of the *Numbers*, nor too light and trivial for the *Learned*. But if they should say to me as they did to *Cicero*, that this Work is not at all proper for the *Learned*, nor would it instruct the rest of the World, who are careless of Knowledge ; far be it from me to answer as *Cicero* did, who, perhaps, in searching for a middle way to Philosophy, such as would improve every Understanding, I have taken that which possibly will be advantageous to none : It is very hard to keep to a *Medium*, and I believe I shall
scarce

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scarce take the pains to search a second Method to please. And if it happen that this Book should be read, I advertise those that have some Knowledge in Philosophy, that I have not pretended to instruct, but to divert them, in presenting to them in a more agreeable manner, that which they already know solidly : And I also advertise those to whom this Subject is new, that I believe it will at once instruct and please them : The *Knowing* will act, contrary to my Intentions, if they seek only Profit ; and the *rest*, if they seek only Pleasure.

I will not amuse my self in telling you, that I have taken out of Philosophy the matter the most capable of inspiring a Curiosity ; for in my Opinion, we ought to seek no greater Interest, than to know how this World which we inhabit, is made, and that there are other Worlds that resemble it, and that are inhabited as well as this : After all, let those that please, give themselves the trouble of finding out this Truth, but I am sure they will not do it in Complaisance to my Book : Those that have any Thoughts to lose, may cast them away here ; but all People are not

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in a Condition, you will say, to make such an unprofitable Expence of Time.

In this Discourse I have introduced a fair Lady to be instructed in Philosophy, which, till now, never heard any speak of it; imagining, by this Fiction, I shall render my Work more agreeable, and to encourage the fair Sex (who lose so much time at their Toylets in a less charming Study) by the Example of a Lady who had no supernatural Character, and who never goes beyond the Bounds of a Person who has no Tincture of Learning, and yet understands all that is told her, and retains all the Notions of *Tourbillions* and Worlds, without Confusion: And why should this imaginary Lady have the Precedency of all the rest of her delicate Sex? Or do they believe they are not as capable of conceiving that which she learned with so much Facility?

The truth is, Madam the *Marquiese* applies her self to this Knowledge; but what is this Application? It is not to penetrate by force of Meditation, into a thing that is obscure in it self, or any thing that is obscurely explained; 'tis only to read, and to represent to your selves at the same time

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time what you read, and to form some Image of it that may be clear and free from perplexing Difficulties. I ask of the Ladies (for this System) but the same Attention that they must give the Princess of *Cleve*, if they would follow the Intrigue, and find out the Beauties of it; though the truth is, that the *Idea's* of this Book are not so familiar to the most part of Ladies, as those of the Princess of *Cleve*; but they are not more obscure, than those of that Novel, and yet they need not think above twice at most, and they will be capable of taking a true Measure, and having a just Sense of the whole.

I do not pretend to take a System in the Air, without a Foundation, but I have made use of true Philosophical Reasons; and of those, employed as many as are necessary; and, as it happily falls out, the Notions of Philosophy upon this Subject are pleasant; and at the same time that they satisfy the Reason, they content the Imagination with a Prospect as agreeable, as if they had been made on purpose to entertain it.

Where

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Where I found some pieces not altogether so diverting as I wish'd, I gave them Foreign Ornaments: *Virgil* made use of the same Method in his *Georgicks*, where he adorned his Subject (of it self altogether dull) with several Digressions, and very often agreeably. *Ovid* himself has done as much in his *Art of Loving*, though the Foundation of his Theme was infinitely more agreeable than any thing that could be mixed with it; therefore it is to be supposed, he imagined it would be tiresome, always to treat of one and the same thing, though it was of Gallantry: But for my part, I, who have much more need of the Assistance of Digression, have, notwithstanding, made use of them very frugally: I have authorized them by the Liberty of natural Conversation, and have put them but in those places where I thought every body would be glad to find them; I have put the greatest part of them in the beginning of my Work, because the Mind will not be then so well accustomed to the principal *Idea's* that I present. In fine, I have taken them from the Subject it self, or, at least, approaching to it.

I would

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I would not have any Imagination of the Inhabitants of the Worlds that are entirely fabulous, but have endeavour'd to relate only that which might be thought most reasonable; and the Visions themselves that I have added, have something of a real Foundation in them; the True and the False are here mix'd, but they always are very easie to be distinguish'd; yet I do not undertake to justify a Composure so fantastical: This is the most important Point of this Work, and 'tis this only that I cannot give a Reason for; but the publick Censure will inform me, what I ought to think of this Design.

There remains no more for me to say in this Preface, but to speak to one sort of People, who, perhaps, will be the most difficult to content (and yet I have very good Reasons to give them, but, possibly, such as they will not take for current Pay, unless they appear to them to be good;) and these are the scrupulous Persons, who may imagine, that in regard of Religion, there may be danger in placing Inhabitants any where, but on this Earth; but I have had a Respect, even to the most delicate

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delicate Niceties of Religion, and would not be guilty of any thing that should shock it in a publick Work, though that Care were contrary to my Opinion. But that which will surprize you is, that Religion is not at all concerned in this System, where I fill an infinite number of Worlds with Inhabitants ; and you need only reform and clear one Error of the Imagination : But when I shall tell you the Moon is inhabited, you presently represent to your Fancy Men made as we are ; and if you are a little of the Theologian, you will then be presently full of Difficulties : *The Posterity of Adam could not possibly extend to the Moon, nor send Colonies into that Country ; then they are not the Sons of Adam :* And that would be a great perplexing Point in Theology, to imagine there should be Men, and those not to descend from *Adam* ; there is no need of saying any more, all the Difficulties are reduced to that, and the Arguments we ought to employ in a tedious Explanation, are too worthy of Gravity to be put into this Book, though perhaps I could answer solidly enough to their Objections, if I undertook

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dertook it ; but 'tis certain, I have no need of answering them ; let the Men in the Moon do it, who are only concern'd ; for 'tis they that put the Men there, I only put Inhabitants, which, perhaps, are not Men. What are they then ? 'Tis not that I have seen them, that I speak of them ; yet do not imagine that I design, (by saying there are no Men in the Moon) to evade your Objections, but you shall see, that 'tis impossible (according to the *Idea's* that I have of the infinite Diversity that Nature ought to use in her Works) that there can be none. This *Idea* governs all the Book, and it cannot be confuted by any Philosopher ; therefore I believe I shall meet with no Objection from any, but those who speak of these Entertainments, without having read them. But is this Reason enough for me to depend on ? No, 'tis rather a sufficient Reason for me to fear, that this Objection will be often urged in several places.

T O.

Monfieur de L —

SIR,

YOU expect I shou'd give you an exact Account in what manner I pass'd my Time in the Country, at the Castle of Madam the Marquiese of----- but I am afraid this Account will enlarge it self to a Volume, and that which is worse, to a Volume of Philosophy, while you, perhaps, expect to hear of Feasting, Parties at play, and Hunting-matches. No, Sir; you will hear of nothing but Planets, Worlds and Tourbillions, nor has there been any other things discours'd on. Perhaps you are a Philosopher, and will not believe my Discourse, so ridiculous as it may appear to the less Learned; and possibly, you will be glad to hear that I have drawn Madam the Marquiese into our Party: We cou'd not have made an Advantage more considerable, since I always esteem'd *Touth and Beauty*

To Monsieur de L---

Beauty as things of great value. If Wisdom her self wou'd appear to Mankind, with a Design to be well received, she wou'd not do ill to assume the Form and Resemblance of Madam the Marquiese; and cou'd she be so agreeable in her Conversation, I assure you, all the World wou'd run after her Precepts. You must not expect to hear Wonders, when I shall make you a Relation of the Discourse I had with this beautiful Lady; and I ought to have as much Wit as her self, to repeat all she said in the same graceful manner she express'd it; however, I hope to make you sensible of the Readiness of her Genius, in comprehending all things; for my part, I esteem her perfectly witty, since she is so with the most Facility in the World. Perhaps you will be apt to say, that her Sex must needs be wanting in those Perfections which adorn ours, because they do not read so much. But what signifies the reading of so many vast Volumes over, since there are a great many Men who have made that the Business of their whole Lives, to whom, if I durst, I wou'd scarce allow the Knowledge of any thing? As for the rest, you will be oblig'd to me. I know, before I begin to open the Conversation I had with Madam
the

To Monsieur de L---

the Marquiese, I ought, of Course, to describe to you the Castle, whither she was retir'd, to pass the Autumn. People are apt, on such Occasions, to make very large Descriptions, but I'll be more favourable to you. Let it suffice, that when I arriv'd there, I found no Company, which I was very glad of: The two first Days there pass'd nothing remarkable, but our Time was spent in discoursing of the News of Paris, from whence I came: After this, pass'd those Entertainments which, in the Sequel, I will impart to you. I will divide our Discourse therefore into Nights, because, indeed, we had none, but in the Nights.

The

T H E

First Night.

WE went one Evening after Supper to walk in the Park, the Air was cool and refreshing, which made us sufficient amends for the excessive heat of the Day, and of which I find I shall be obliged to make you a Description, which I cannot well avoid, the fineness of it leading me so necessarily to it.

The Moon was about an hour high, which shining through the Boughs of the Trees, made a most agreeable Mixture, and checker'd the Paths beneath with a most resplendent white upon the green, which appeared to be black by that

B Light.

Light ; there was no Cloud to be seen that could hide from us, or obscure the smallest of the Stars, which lookt all like pure polisht Gold , whose Luster was extreemly heightened by the deep Azure Field on which they were placed : These pleasant Objects set me a thinking, and had it not been for Madam *la Marquise*, I might have continued longer in that silent Contemplation ; but the Presence of a Person of her Wit and Beauty hindered me from giving up my Thoughts intirely to the Moon and Stars. Do not you believe, Madam, said I, that the clearness of this Night exceeds the Glory of the brightest day ? I confess, said she , the Day must yield to such a Night ; the day which resembles a fair Beauty, which though more sparkling , is not so charming as one of a brown Complexion , who is a true Emblem of the Night. You are very generous, Madam, said I, to give the advantage to the brown, you who
are

are so admirably fair your self :
 Yet without dispute, day is the
 most beautiful thing in Nature ;
 and most of the Heroines in Roman-
 ces, which are modelled after the
 most perfect *Idea* fancy can repre-
 sent by the most ingenious of man-
 kind, are generally described to be
 fair. But, said she, Beauty is insi-
 pid, if it want the pleasure and pow-
 er of charming ; and you must ac-
 knowledge that the brightest day
 that ever you saw could never have
 engaged you in so agreeable an Ec-
 stasie, as you were just now like to
 have fallen into by the powerful at-
 tractions of this Night.

I agree to what you say, Madam,
 said I, but I must own at the same
 time, that a Beauty of your com-
 plexion would give me another
 sort of transport than the finest
 Night with all the advantages ob-
 scurity can give it.

Though that were true, said she,
 I should not be satisfied ; since those
 fair Beauties that so resemble the

day, produce not those soft Effects
 of the other. How comes it, that
 Love:s who are the best Judges of
 what is pleasing and touching, do
 always address themselves to the
 Night, in all their Songs and Ele-
 gies? I told her, that they most
 certainly paid their acknowledg-
 ments to the Night; for she was
 ever most favourable to all their
 Designs. But, Sir, replied the *Mar-
 quiese*, she receives also all their
 Complaints, as a true Confident of
 all their Entrigues; from whence
 proceeds that? The silence and
 gloom of the Night, said I, inspires
 the restless Sigher with thoughts
 very passionate and languishing,
 which the busier day diverts a
 thousand little ways (though one
 would think the Night should
 charm all things to repose) and
 though the day affords Solitudes,
 dark Recesses, Groves and Grottoes,
 equally obscure and silent as the
 Night it self; yet we fancy that the
 Stars move with a more silent mo-
 tion

tion than the Sun, and that all the Objects which the Heavens represent to our view, are softer, and stay our sight more easily; and flattering our selves that we are the only Persons at that time awake, we are vain enough to give a loose to a thousand thoughts extravagant and easing. Besides, the Scene of the Universe by day-light appears too Uniform, we beholding but one Great Luminary in an Arched Vault of Azure, of a Vast Extent, while all the Stars appear confusedly dispersed, and disposed as it were by chance in a thousand different Figures, which assists our roving Fancies to fall agreeably into silent thoughts. Sir, replied Madam *la Marquise*, I have always felt those effects of Night you tell me of, I love the Stars, and could be heartily angry with the Sun for taking them from my sight. Ah, cry'd I, I cannot forgive his taking from me the sight of all those Worlds that are there. Worlds, said she,

what Worlds ? And looking earnestly upon me, asked me again, what I meant ? I ask your Pardon, Madam, said I, I was insensibly led to this fond discovery of my weakness. What weakness, said she, more earnestly than before ? Alas, said I, I am sorry that I must confess I have imagined to my self, that every Star may perchance be another World, yet I would not swear that it is so ; but I will believe it to be true, because that Opinion is so pleasant to me, and gives me very diverting *Idea's*, which have fixed themselves delightfully in my Imaginations, and 'tis necessary that even solid Truth should have its agreeableness. Well, said she, since your Folly is so pleasing to you, give me a share of it ; I will believe whatever you please concerning the Stars, if I find it pleasant. Ah, Madam, said I, hastily, it is not such a Pleasure as you find in one of *Mullier's* Plays ; it is a Pleasure that is——I know not where, in
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our Reason, and which only transports the Mind. What, replied she, do you ~~think~~ me then incapable of all those Pleasures which entertain our Reason, and only treat the Mind? I will instantly shew you the contrary, at least as soon as you have told me what you know of your Stars. Ah, Madam, cry'd I, I shall never indure to be reproach'd with that neglect of my own happiness, that in a Grove at ten a Clock of the Night, I talk'd of nothing but Philosophy, to the greatest Beauty in the World; no, Madam, search for Philosophy some where else.

But 'twas in vain to put her off by Excuses, from a Novelty she was already but too much prepossess'd with: There was a necessity of yielding, and all I could do was to prevail with her to be secret, for the saving my Honour; but when I found my self engaged past retreat, and had a design to speak, I knew not where to begin my discourse,

for to prove to her (who understood nothing of Natural Philosophy) that the Earth was a Planet, and all the other Planets so many Earths , and all the Stars Worlds, it was necessary for the explaining my self, to bring my Arguments a great way off ; and therefore I still endeavoured to perswade her that 'twas much better to pass the time in another manner of Conversation, which the most reasonable People in our Circumstances would do ; but I pleaded to no Purpose, and at last to satisfy her , and give her a general *Idea* of Philosophy, I made use of this way of arguing.

All Philosophy is grounded on two Principles, that of a passionate thirst of knowledge of the Mind, and the weakness of the Organs of the Body ; for if the Eye-sight were in perfection, you could as easily discern there were Worlds in the Stars, as that there are Stars: On the other hand , if you were less curious

ous and desirous of knowledge, you would be indifferent, whether it were so or not, which indeed comes all to the same purpose; but we would gladly know (more than we see, and there's the difficulty: for if we could see well and truly what we see, we should know enough; but we see most Objects quite otherwise than they are; so that the true Philosophers spend their time in not believing what they see, and in endeavouring to guess at the knowledge of what they see not; and in my Opinion this kind of life is not much to be envied; but I fancy still to my self that Nature is a great Scene, or Representation, much like one of our *Opera's*; for, from the place where you sit to behold the *Opera*, you do not see the Stage, as really it is, Since every thing is disposed there for the representing agreeable Objects to your sight, from a large distance, while the wheels & weights, which move and counterpoise the
Machines

Machines are all concealed from our view ; nor do we trouble our selves so much to find out how all those Motions that we see there, are performed; and it may be among so vast a number of Spectators, there is not above one Enginier in the whole Pit , that troubles himself with the consideration how those flights are managed that seem so new and so extraordinary to him, and who resolves at any rate to find out the contrivance of them : You cannot but guess, Madam, that this Enginier is not unlike a Philosopher; but that which makes the difficulty incomparably greater to Philosophers , is, that the Ropes, Pullies, Wheels and Weights , which give motion to the different Scenes represented to us by Nature , are so well hid both from our sight and understanding , that it was a long time before mankind could so much as guess at the Causes that moved the vast Frame of the Universe.

Pray, Madam , imagine to your
self,

self, the Ancient Philosophers beholding one of our *Opera's*, such an one as *Pythagoras*, *Plato*, *Aristotle*, and many more, whose Names and Reputations make so great a noise in the World; and suppose they were to behold the flying of *Phaeton*, who is carried aloft by the Winds, and that they could not discern the Ropes and Pullies, but were altogether ignorant of the contrivance of the Machine behind the Scenes; one of them would be apt to say — *It is a certain Secret Virtue that carries up Phaeton.* Another; *That Phaeton is composed of certain Numbers, which make him mount upwards.* The third---*That Phaeton has a certain kindness for the highest Part of the Theatre, and is uneasy when he is not there.* And a fourth — *That Phaeton was not made for flying, but that he had rather fly, than leave the upper part of the Stage void:* Besides a hundred other Notions, which I wonder have not intirely ruined

ruined the Reputation of the Ancients. In our Age *Des Cartes*, and some other Moderns would say----
That Phaeton's flight upward is because he is hoisted by Ropes, and that while he ascends, a greater weight than he descends.

And now men do not believe that any corporeal being moves it self, unless it be set on Motion, or pusht by another Body, or drawn by Ropes; nor that any heavy thing ascends or descends, without a counter-poise equal with it in weight to balance it; or that 'tis guided by Springs. And could we see Nature as it is, we should see nothing but the hinder part of the Theatre at the *Opera*. By what you say, said Madam *la Marquiese*, Philosophy is become very Mechanical. So very Mechanical, said I, that I am afraid men will quickly be ashamed of it; for some would have the Universe no other thing in Great, than a Watch is in Little; and that all things in it are order-
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ed by Regular Motion , which depends upon the just and equal disposal of its Parts : Confess the Truth, Madam, have not you had heretofore a more sublime *Idea* of the Universe , and have not you honoured it with a better Opinion than it deserved ? I have known several esteem it less since they believed they knew it better ; and for my part, said she , I esteem it more since I knew it is so like a Watch: And'tis most surprizing to me , that the course and order of Nature, how ever admirable it appears to be , moves upon Principles and Things that are so very easie and simple. I know not , replied I, who has given you so just *Idea's* of it, but 'tis not ordinary to have such ; most People retain in their minds some false Principle or other of Admiration, wrapped up in obscurity , which they adore: They admire Nature, only because they look on it as a kind of Miracle, which they do not understand ;
 and

and 'tis certain that those sort of People never despise any thing, but from the moment they begin to understand it : But, Madam, I find you so well disposed to comprehend all I have to say to you, that without further Preface, I need only draw the Curtain, and shew you the World.

From the Earth where we are, that which we see at the greatest distance from us, is that Azure Heaven, or that vast Vault, where the Stars are placed as so many Golden Nails, which are called fixt, because they seem to have no other motion, but that of their proper Sphere, which carries them along with it, from East to West; between the Earth and the last, or lowest Heaven, are hung at different heights, the Sun, the Moon, and five other Stars, which are called Planets, *Mercury, Venus, Mars, Jupiter, and Saturn.* These Planets not being fixt to any one Sphere, and having unequal Motions, they
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are in different Aspects, one to another, and according as they are in conjunction, or at distance, they make different Figures; whereas the fixt Stars are always in the same Position, one towards another: As for Example, *Charles's-Wain*, or the Constellation of the Great Bear, which you see, and which consists of Seven Stars, has always been, and will still continue the same; but the Moon is sometimes near the Sun, and sometimes at a great distance from it, and so through all the rest of the Planets: It was in this manner that the Celestial Bodies appeared to the Ancient Chaldean Shepherds, whose great leisure produced these first Observations, which have since been so well improved; and upon which all Astronomy is founded: For Astronomy had its beginning in *Chaldea*, as Geometry was invented in *Egypt*, where the inundations of the River *Nile*, having confounded and removed the Limits and the Land-

Land-marks of the several Possessions of the Inhabitants, did prompt them to find out sure and exact Measures, by which every one might know his own Field from that of his Neighbours: So that Astronomy is the Daughter of Idleness, Geometry is the Child of Interest; and should we inquire into the Original of Poetry, we should in all appearance find, that it owes its beginning to Love.

I am extremely glad, said the *Marquiese*, that I have learned the Genealogy of the Sciences, and I find that I must content my self with Astronomy, Geometry, according to what you have said, requiring a Soul more interested in worldly Concerns, than I am; and for Poetry, 'tis most proper for those of a more Amorous Inclination; but I have all the leisure and time to spare that Astronomy requires: Besides that I live now happily retired in the Fields and Groves, and lead a sort of Pastoral Life,

Life, so very agreeable to Astronomy. Do not deceive your self, Madam, said I; 'tis not a true Pastoral Life, to talk of Planets and fix'd Stars : Be pleased to consider, that the Shepherds in the Story of *Astræa* did not pass their time in that kind of divertisement ; they had business of a softer, and more agreeable Nature. Oh, said she, the Life of the Pastorals of *Astræa* is too dangerous : I like that of the Chaldean Shepherds better, of whom you spoke but now : Go on with them, for I will hear nothing from you, but Chaldean : So soon as that Order, and these Motions of the Heavens were discovered, what was the next thing to be considered ? The next thing, said I, was, to guess how the several parts of the Universe were to be disposed and ranged in order ; and that is what the Learned call, The making a System : But before, Madam, I explain to you the first System, be pleased to observe, that we are all naturally made like a certain Athenian Fool, of whom you have heard ; who fancied that all the Ships that came into the Port of *Piræa*, belonged to him ; for we are so vain as to believe, that all this vast Frame of Na-

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ture was destined to our use : For if a Philosopher be asked, for what all this prodigious number of fixed Stars serve (since a very few would supply the business of the whole) he will tell you gravely, that they were made to please our sight. Upon this Principle, at first, Man believed, that the Earth was immovably fixed in the Centre of the Universe, whilst all the Celestial Bodies (made only for her) were at the pains of turning continually round, to give Light to the Earth : And that it was therefore above the Earth, they placed the Moon ; above the Moon, *Mercury* ; then *Venus*, the Sun, *Mars*, *Jupiter*, *Saturn* ; and above all, the Sphere of the fixed Stars : The Earth, according to this Opinion, was just in the middle of the several Circles, described by the Planets ; and the greater these Circles were, the further they were distant from the Earth ; and by consequence, they took a longer time in compleating their round ; which is certainly true. I know not, said the *Marquise*, why you should not approve of this Order of the Universe, which seems to be so clear and intelligible ; for my
part,

part, I am extreamly pleased and satisfied with it. Madam, said I, without Vanity, I have very much softned and explained this System: Should I expose it to you such as it was first invented by its Author *Ptolemy*, or by those that have followed his Principles, it would frighten you: The motion of the Planets being irregular, they move sometimes fast, sometimes slow; sometimes towards one side, sometimes to another; at one time near the Earth, at another far from it. The Ancients did imagine I know not how many Circles, differently interwoven one with another; by which they fancy'd to themselves, they understood all the irregular Phænomena's, or Appearances in Nature. And the Confusion of these Circles was so great, that at that time, when men knew no better, a King of *Arragon*, a great Mathematician (not over devout) said, *That if God had call'd him to his Council when he form'd the Universe, he could have given him good Advice.* The thought was impious, yet 'tis odd to reflect, that the confusion of *Ptolemy's* System gave an occasion for the sin of that King: The good Advice he would have

given, was, no doubt, for surpassing these different Circles, which had so embarrass'd the Celestial Motions; and, it may be also, with regard to the two or three superfluous Spheres, which they had plac'd above the fixed Stars. The Philosophers, to explain one kind of motion of the heavenly Bodies, did fancies a Sphere of Christal above that Heaven which we see, which set the inferior Heaven on motion; and if any one made a new discovery of any other Motion, they immediately made a new Sphere of Christal: in short, these Christalline Heavens cost them nothing. But why Spheres of Christal, said Madam *la Marquiese*? Would no other Substance serve? No, said I, Madam; for there was a necessity of their being transparent, that the Light might penetrate; as it was requisite for them to be solid Beams. *Aristotle* had found out, that Solidity was inherent in the Excellency of their Nature; and because he said it, no body would adventure to question the truth of it. But there have appear'd Comets, which we know to have been vastly higher from the Earth, than was believed by the Ancients: These,

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in their course, wou'd have broke all those Chrystal Spheres ; and indeed, must have ruined the Universe : So that there was an absolute necessity to believe the Heavens to be made of a fluid substance ; at least, 'tis not to be doubted, from the observation of this, and the last Age, that *Venus* and *Mercury* move round the Sun, and not round the Earth. So that the ancient System is not to be defended, as to this particular : But I will propose one to you, which solves all Objections, and which will put the King of *Arragon* out of a condition of advising ; and which is so surprisngly simple and easie, that that good quality alone ought to make it preferable to all others. Methinks, said Madam *la Marquiese*, that your Philosophy is a kind of Sale, or Farm, where those that offer to do the Affair, at the smallest Expence, are preferr'd. 'Tis very true, said I ; and 'tis only by that, that we are able to guess at the Scheme, upon which Nature hath fram'd her Work : She is very saving, and will take the shortest and cheapest way : Yet notwithstanding, this Frugality is accompany'd with a most surprisng Magnificence,

which shines in all she has done ; but the Magnificence is in the Design, and the Oeconomy in the Execution : And indeed, there is nothing finer than a great Design, carried on with a little Expence. But we are very apt to overturn all these Operations of Nature, by contrary *Idea's* : We put Oeconomy in the Design, and Magnificence in the Execution : We give her a little Design, which we make her perform with ten times a greater Charge than is needful. I shall be very glad, said she, that this System, you are to speak of, will imitate Nature so exactly ; for this good Husbandry will turn to the advantage of my Understanding, since by it I shall have less trouble to comprehend what you have to say. There is in this System no more unnecessary difficulties.

Know then, that a certain German, named *Copernicus*, does at one blow cut off all these different Circles, and Christalline Spheres, invented by the Ancients ; destroying the one, and breaks the other in pieces ; and being inspir'd with a Noble Astronomical Fury, takes the Earth, and hangs it at a vast distance from the Centre of the World, and sets the Sun in its place,

place, to whom that Honour does more properly belong ; the Planets do no longer turn round the Earth, nor do they any longer contain it in the Circle they describe ; and if they enlighten us, it is by chance, and because they find us in their way : All things now turn round the Sun ; among which, the Globe it self, to punish it for the long Rest, so falsely attributed to it before ; and *Copernicus* has loaded the Earth with all those Motions, formerly attributed to the other Planets ; having left this little Globe none of all the Celestial Train, save only the Moon, whose natural Course it is, to turn round the Earth. Soft and fair, said Madam *la Marquiese* ; you are in so great a Rapture, and express your self with so much Pomp and Eloquence, I hardly understand what you mean : You place the Sun unmoveable in the Centre of the Universe ; Pray, what follows next ? *Mercury*, said I, who turns round the Sun ; so that the Sun is in the Centre of the Circle he describes : And above *Mercury*, *Venus* ; who turns also round the Sun : Next comes the Earth ; which being more elivated than *Mercury*, or *Venus*,

describes a Circle of a greater Circumference than those two Planets: Last, come *Mars*, *Jupiter* and *Saturn*, in their order, as I have nam'd 'em: So that you see easily, that *Saturn* ought to make the greatest Circle round the Sun; it is therefore that *Saturn* takes more time to make his Revolution, than any other Planet. Ah, but, said the *Marquiese*, interrupting me, you forget the Moon. Do not fear, said I, Madam; I shall soon find her again. The Moon turns round the Earth, and never leaves it; and as the Earth moves in the Circle it describes round the Sun, the Moon follows the Earth in turning round it; and if the Moon do move round the Sun, it is only because she will not abandon the Earth. I understand you, said she: I love the Moon for staying with us, when all the other Planets have left us; and you must confess, that your German *Copernicus* would have taken her from us too, had it been in his power; for I perceive by his procedure, he had no great kindness for the Earth. I am extremely pleas'd with him, said I, for having humbled the Vanity of mankind, who had usurp'd the first and best Situation

tion in the Universe ; and I am glad to see the Earth under the same Circumstances with the other Planets. That's very fine, said the *Marquiese* : Do you believe that the Vanity of Man places it self in Astronomy ; or that I am any way humbled, because you tell me the Earth turns round the Sun ? I'll swear, I do not esteem my self one whit the less. Good Lord, Madam, said I, Do you think I can imagine you can be as zealous for a Precedency in the Universe, as you would be for that in a Chamber ? No, Madam ; the Rank of Place between two Planets will never make such a bustle in the World, as that of two Ambassadors : Nevertheless, the same inclination that makes us endeavour to have the first place in a Ceremony, prevails with a Philosopher in composing his System, to place himself in the Centre of the World, if he can : He is proud to fancy all things made for himself ; and without reflexion, flatters his Senses with this Opinion, which consists purely in Speculation. Oh, said the *Marquiese*, this is a Calumny of your own invention against mankind, which ought never to have received *Copernicus* his

his Opinion, since so easie, and so humble. *Copernicus*, said I, Madam, himself was the most dissident of his own System ; so that it was a long time before he would venture to publish it , and at last resolv'd to do it at the earnest intreaty of People of the first Quality. But do you know what he did, the Day they brought him the first printed Copy of his Book ? That he might not be troubled to answer all the Objections and Contradictions he was sure to meet with, he wisely left the World, and died. Hold, said the *Marquiese*, we ought to do Justice to all the World ; and 'tis most certain, 'tis very hard to believe we turn round, since we do not change places, and that we find our selves in the Morning, where we lay down the Night before. I see very well by your Looks, what 'tis you are going to say ; That since the Earth moves all together — Most certainly, said I : 'Tis the same thing as if you were asleep in a Boat, sailing on a River, you would find your self in the same place in the Morning, and in the same Situation as to the several parts of the Boat. True, said she, but with this difference ; I shou'd,
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at my waking, find another Shoar ; and that would convince me, my Boat had chang'd its Situation : But 'tis not the same with the Earth ; for there I find every thing as I left it the Night before. Not at all, Madam, said I ; the Earth changes the Shoar, as well as your Boat. You know, Madam, that above and beyond all the Circles, described by the Planets, is the Sphere of the fixed Stars ; that's our Shoar : I am on the Earth, which makes a great Circle round the Sun ; I look towards the Centre of this Circle, there I see the Sun ; if the brightness of his Rays did not remove the Stars from my sight, by looking in a streight Line, I shou'd easily perceive the Sun corresponding to some fixed Star beyond him ; but in the Night-time, I see clearly the Stars, to which the Sun did answer, or was opposite to, the Day before ; which is, indeed, the same thing. If the Earth were immoveable, and did not alter its Situation in its own Circle, I shou'd always see the Sun opposite to the same fixed Stars ; but I see the Sun in different Opposition to the Stars, every Day of the Year : It most necessarily follows then,
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the Circle changes its Situation, that is, the Shoar, round which we go daily : And as the Earth performs its Revolution in a Year, I see the Sun, in that space of time, answer in direct Opposition to a whole Circle of fixed Stars ; this Circle is called the Zodiack : Will you please, Madam, that I trace the Figure of it on the Sand ? By no means, said she ; I can satisfie my self, without that Demonstration : Besides that, it would give a certain Mathematical Air to my Park, which I do not like. Have not I heard of a certain Philosopher, who being shipwreck'd, and cast upon an unknown Island ; who seeing some Mathematical Propositions drawn on the Sea-sands, called to one of those with him, and cry'd, *Courage, my Friend, here are the Foot-steps of Men ; this Country is inhabited ?* You know, it is not decent in me to make such Foot-steps, nor must they be seen in this place. 'Tis fit, continued I, Madam, that nothing be seen here, but Steps of Lovers ; that is to say, your Name and Cypher engraven on the Bark of Trees by the hand of your Adorers. Pray, Sir, said she, let Adorers alone, and
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let us speak of the Sun. I understand very well, how we imagine he describes that Circle, which, indeed, we our selves describe; but this requires a whole Year's time, when one wou'd think the Sun passes over our heads every day: How comes that to pass? Have you not observ'd, said I, that a Bowl thrown on the Earth, has two different Motions; it runs toward the Jack, to which it is thrown; and at the same time it turns over and over several times, before it comes that Length; so that you will see the Mark that is on the Bowl, sometimes above, and sometimes below: 'Tis just so with the Earth; in the time it advances on the Circle it makes round the Sun, in its yearly Course, it turns over once every four and twenty Hours, upon its own Axis; so that in that space of time, which is one natural Day, every point of the Earth (which is not near the South or North-Poles) loses and recovers the sight of the Sun: And as we turn towards the Sun, we imagine the Sun is rising upon us; so when we turn from it, we believe she is setting. This is very pleasant, said the *Marquise*: You make the Circle to do

do all, and the Sun to stand idle; and when we see the Moon, Planets and fixed Stars turn round us in four and twenty Hours, all is but bare Imagination. Nothing else, said I, but pure Fancy, which proceeds from the same Cause; only the Planets make their Circle round the Sun, not in the same space of time, but according to their unequal distance from it; and that Planet which we see to day, look to a certain Point of the Zodiack, or Sphere of fixed Stars, we shall see it answer to every other Point to Morrow; as well because that Planet moves on its Course, as that we proceed in ours: We move, and so do the other Planets: By this means we vary both Situation and Opposition, as to them, and we think we discover Irregularities in their Revolutions, which I will not now trouble you with; 'tis sufficient for you to know, that any thing that may appear to us to be irregular, in the Course of the Planets, is occasion'd by our own Motion meeting theirs in such different manners; but upon the whole the Course of the Planets, is most regular. I agree with all my heart, said the *Marquiese*; yet I wish with all my heart,

heart, that that Regularity were not so laborious to the Earth : I fancy *Copernicus* has not been very careful of its Concerns, in making so weighty and solid a Mass run about so nimbly. But, Madam, said I, wou'd you rather, that the Sun, and the Stars (which are generally far greater Bodies) shou'd make a vast Circumference round the Earth in a Day, and run an infinite number of Leagues in twenty four Hours time ? Which they must of necessity do, if the Earth have not that Diurnal Motion on its own Axis. Oh ! answered she, the Sun and Stars are all Fire, swiftness of Motion is easie to them ; but for the Earth, that does not seem to be very portable. And wou'd you believe it, said I, Madam, if you had never seen the Experiment, that a First-Rate Ship, of a hundred and twenty Guns, with fifteen hundred Men, and proportionable Provision, with all her Ammunition and Tackle a-board, were a very portable thing ? Notwithstanding, a gentle Breeze will move this Ship on the Sea, because the Water is liquid, and yielding easily, makes no resistance to the motion of the Vessel : So the Earth,

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notwithstanding of as vast bulk and weight, is easily mov'd in the Celestial Matter, which is a thousand times more fluid than the Water of the Sea; and which fills all that vast Extent, where the Planets swim, as it were: And to what wou'd you fix or grapple the Earth, to hinder it from being carry'd along with the Current of this Celestial Matter or Substance? It wou'd be just as if a little wooden Ball shou'd not follow the Current of a rapid River.

But, said she, how does the Earth support its vast weight, on your Heavenly Substance, which ought to be very light, since it is so fluid? That does not follow, answered I, Madam, that a thing must be light, because it is fluid: What say you to the First-Rate Ship, I spoke of, with all its Lading? Yet 'tis lighter than the Water, because it swims upon it. As long as you command your First-Rate Frigate, said she, angrily, I will not argue with you; but can you assure me, that I am in no danger, by inhabiting such a little Humming-Top, as you have made the World to be? Well, Madam, said I, the Earth shall be supported by four Elephants,

phants, as the *Indians* fanſie it is. Here's a new System indeed, cry'd Madam *la Marquieſe* ; yet I love thoſe Men, for providing for their own ſecurity, by reſting upon a ſolid Foundation ; whereas we that follow *Copernicus*, are ſo inconfiderate, as to ſwim at a venture upon your Celeſtial Matter : And I dare ſay, if theſe *Indians* thought the Earth in any danger of falling, they wou'd quickly double the number of their Elephants. They wou'd have all the reaſon in the World to do ſo, ſaid I, Madam ; (laughing at her fancy ;) and wou'd not ſpare Elephants to ſleep in quiet, without fear of falling : And, Madam, we will add as many as you pleaſe to our System for this Night, and take them away by degrees, as you get more Assurance. Really, ſaid ſhe, I do not think they are needful at preſent ; for I feel I have Courage ſufficient to turn round. You muſt go a ſtep further, ſaid I, and you ſhall turn round with delight ; upon this System you will form to your ſelf very pleaſant and agreeable Idea's : As for Example ; Sometimes I fanſie I am hanging in the Air, and that I ſtay there without moving, while the Earth turns

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round

round under me in four and twenty Hours time, and that I see beneath me all those different Faces ; some white, some black, some tawny, others of an Olive-colour ; first I see Hats, then Turbans, there Hands cover'd with Wool, there shav'd Heads ; sometimes Towns with Steeples, some with their long small-pointed Pyramids, and Half-moons on their tops ; sometimes Towns with Porcelaine Towers ; after them, spacious Fields, without Towns, only Tents and Huts ; here vast Seas, frightful Desarts ; in short, all the Variety that is to be seen upon the Face of the Earth. Indeed, said she, such a sight wou'd be very well worth twenty four Hours of ones Time : So that by this System, through the same place where we now are (I do not mean this Park, but that space of Air which our Bodies fill) several other Nations must successively pass, and we return hither, in twenty four hours, to our own place again.

Copernicus himself, said I, Madam, did not understand it better. At first will be here the *English*, discoursing, it may be, upon some politick Design, with more Gravity, but less Pleasure, than we talk
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of our Philosophy: Next will come a vast Ocean, in which there will be sailing some Ships, perhaps not so much at their Ease as we are: Then will appear the Cannibals, eating some Prisoners of War alive, they seeming very unconcern'd at what they suffer: After them, the Women of the Country of *Jesso*, who spend all their time in preparing their Husbands Meals, and in painting their Lips and Eye-brows with Blew, to please the ugliest Fellows in the World: Next will succeed the *Tartars*, who go, with great Devotion, on Pilgrimage to that great Priest, who never comes out of an obscure place, where he has no other Light but Lamps, by which they adore him: After them, the beautiful *Circassian* Women, who make no difficulty of granting any Favour to the first Comer, except what they essential know does belong to their Husbands: Then the *Crim*, or Little *Tartars*, who live by stealing of Wives for the *Turks* and *Persians*: And at last, our selves again, perhaps talking as we do now.

I am mightily taken, said the *Marquiese*, with the Fancy of what you say; but if I cou'd see all these things from above, I

wou'd wish to have the power to hasten and stop the Motion of the Earth, according as I lik'd or dis-lik'd the several Objects that pass under me ; I wou'd make the Politicians, and those that eat their Enemies, to move very fast : But there are others that I shou'd be very curious to observe ; and particularly, the fine *Circassian* Women, who have one so peculiar a Custom. That is, said I, their Husbands, who finding so many Charms in their Embraces, as more than satisfy them, do freely abandon their fair Wives to Strangers. The Women of our Country, said the *Marquiese*, must be very ugly, if compar'd to the *Circassians* ; for our Husbands will part with nothing. That is the reason, said I, that the more is taken from 'em ; whereas — No more of these Fooleries, said the *Marquiese*, interrupting me ; there's a serious Difficulty come into my head : If the Earth turn round, then we change Air every Moment, and must breath still that of another Country. By no means, Madam, said I ; the Air which encompasses the Earth extends it self to a certain heighth, it may be, about twenty Leagues, and turns round
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with us. You have, no doubt, seen a thousand times the business of the Silk-worm, where the Balls which these little Creatures do work with so much Art, for their own Imprisonment, are compact, and wrought together with Silk, which is very closely join'd; but they are cover'd with a kind of Down, that is very light and soft: Thus it is, that the Earth, which is very solid, is wrapp'd in a Covering of soft Down of twenty Leagues thickness, which is the Air that is carried round at the same time with it: Above the Air is that Celestial Matter I spoke of, incomparably more pure, more subtle, and more agitated than the Air.

You represent the Earth to me, said the *Marquiese*, as a very contemptible thing, by the despicable *Idea's* you give me of it: 'Tis, nevertheless, upon this Silk-Worm-Ball, there are perform'd such mighty Works; and where there are such terrible Wars, and such strange Commotions as reign every where. 'Tis certainly true, said I, Madam; while at the same time, Nature, who is not at the pains to consider these Troubles and Commotions, carries us all along together, by a general

Motion, and does, as it were, play with this little Globe. It seems to me, said she, that 'tis very ridiculous to inhabit any thing that turns so often, and is so much agitated ; and the worst of all is, that we are not assur'd whether we turn round, or not ; for, to be plain with you, and that I may keep none of my Doubts from you, I do extreamly suspect, that all the Pre-cautions you can take, will not convince me of the Motion of the Earth ; For is it possible, but Nature wou'd have taken care to have given us some sensible Sign, by which we might discover the turning round of so vast a Body ? The Motions (answer'd I) which are most natural to remove, are the least perceptible ; and which holds true, even in Morality ; for the Motion of Self-love is so natural to us, that for the most part we do not feel it, while we believe we act by other Principles. Ah, said she, do you begin to speak of Moral Philosophy, when the Question is of that which is altogether natural ? But I perceive you are sleepy, and begin to yawn ; let us therefore retire, for there's enough said for the first Night, to morrow we shall return hither again ;

again ; you with your Systems, and I with my Ignorance. In returning to the Castle, to make an end of what might be said to Systems, I told her, there was a third Opinion invented by *Ticho-brabe*, who wou'd have the Earth absolutely immovable, and plac'd in the Centre of the Universe, and made the Sun to turn round it, as he did the other Planets to turn round the Sun ; because, since the new Discoveries, it cou'd not be imagin'd that the other Planets turn'd round the Earth. But my Lady *Marquiese*, whose Judgment and Understanding is solid and penetrating, found, there was too much Affectation in endeavouring to free the Earth from turning round the Sun, since several other great Bodies cou'd not be exempt from that Labour ; and that the Sun was not so proper and fit to turn round the Earth, since the other Planets turn round the Sun ; and that this new System was only good to maintain the standing still of the Earth, if one had a mind to undertake that Argument ; but 'tis not proper to perswade another to believe it. At last, we resolv'd to hold ourselves to the Opinion of *Copernicus*,

which is more uniform, and more agreeable, without the least mixture of Prejudice; and, indeed, its Simplicity and Easiness persuades as much as its Boldness pleases.

The Second Night.

AS soon as one could get into my Lady *Marquiese's* Apartment, I sent to know how she did, and how she had slept that Night in turning round. She sent me word, that now she was pretty well accusom'd to the Motion of the Earth, and that *Copernicus* himself cou'd not have rested better that Night than she did. A little after this, there came Company to visit my Lady, which, according to the nauseous Country-fashion, stay'd till the Evening, and yet we thought ourselves happy that we were so easily rid of 'em then, since, according to the custom of the Country, they might have prolong'd their Visit till the next Day; but they were so civil, as not to do it; so that

that Madam the *Marquiese* and I found our selves at liberty. In the Evening we went again to the Park, and the Conversation began as it ended before, of our System : My Lady *Marquiese* had comprehended 'em so well, that she wou'd not be at the pains to re-assume anything of what had pass'd, but press'd me to lead her to something that was new. Well, said I; since the Sun, which is now immoveable, and no longer a Planet ; and that the Earth, that moves round the Sun, is now one, be not surpriz'd if I tell you, the Moon is another Earth, and is, by all appearance, inhabited. Said she, I never heard of the Moon's being inhabited, but as a Fable. So it may be still, said I ; I concern my self no further in these Matters, than Men use to do in Civil Wars ; where the Uncertainty of what may be, makes People still entertain a Correspondence with the adverse Party : As for me, tho' I see the Moon inhabited, I live very civilly with those that do not believe it ; and I carry my self so trimmingly, that I may, upon occasion, with Honour go over to their side who have the better ; but still they gain some considerable Advantage

vantage over us. I'll tell you my Reasons that make me take part with the Inhabitants of the Moon: Suppose then, there had never been any Commerce between *Paris* and *St. Denis*, and that a Citizen of *Paris*, who had never been out of that City, shou'd go up to the top of the Steeple of our Lady, and shou'd view *St. Denis* at a distance, and one shou'd ask him if he believ'd *St. Denis* to be inhabited; he wou'd answer boldly, *Not at all; for* (he wou'd say) *I see the Inhabitants of Paris, but I do not see those of St. Denis, nor ever heard of 'em.* It may be, some body standing by, wou'd represent to him, *That it was true, one cou'd not see the Inhabitants of St. Denis from our Lady's Church, but that the distance was the cause of it; yet that all we cou'd see of St. Denis, was very like to Paris; for St. Denis had Steeples, Houses and Walls; and that it might resemble Paris in every thing else, and be inhabited as well as it.* All these Arguments wou'd not prevail upon my Citizen; who wou'd continue still obstinate in maintaining, that *St. Denis* was not inhabited, because he saw none of the People. The Moon is our
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St. Denis, and we the Citizens of *Paris*,
 that never went out of our own Town.
 Ah, interrupted the *Marquiese*, you do
 us wrong; we are not so foolish as your
 Citizens of *Paris*: Since he sees that *St.*
Denis is so like to *Paris* in every thing, he
 must have lost his Reason, if he did not
 think it was inhabited: But for the Moon,
 that's nothing like the Earth. Have a
 care, Madam, said I, what you say; for if
 I make it appear, that the Moon is in eve-
 ry thing like the Earth, you are oblig'd
 to believe that the Moon is inhabited. I
 acknowledge, said she, if you do that, I
 must yield; and your Looks are so as-
 sur'd, that you frighten me already: The
 two different Motions of the Earth,
 which wou'd never have enter'd into my
 Thoughts, make me very apprehensive
 of all you say. But is it possible that the
 Earth can be an enlighten'd Body, as the
 Moon is? For, to resemble it, it must be
 so. Alas, Madam, said I, to be enlight-
 ned, is not so great a matter as you ima-
 gine, and the Sun only is remarkable for
 that Quality: 'tis he alone that is enlight-
 ned of himself, by virtue of his particular
 Essence; but the other Planets shine on-
 ly,

ly, as being enlightned by the Sun : The Sun communicates his Light to the Moon, which reflects it upon the Earth ; as the Earth, without doubt, reflects it back again to the Moon, since the distance from the Moon to the Earth is the same as from the Earth to the Moon.

But, said the *Marquiese*, is the Earth as proper for reflecting the Light of the Sun, as the Moon ? You are always for the Moon, said I, and you cannot rid your self of those Remains of Kindness you have for her. Light is compos'd of little Balls, which rebound upon any solid Body, which is *opaque*, or obscure, and are sent back another way ; whereas they pass through any thing that offers them an Opening, or Passage, in a streight Line ; which is *Diaplanus*, or clear ; such as Air and Glass : So that the Moon enlightens us, because she is an *Opaque*, solid Body, which retorts these little Balls upon us ; and I believe you will not dispute the same Solidity to the Earth. Admire then, Madam, how advantageous it is, to be well posted ; so that the Moon being at a great distance from us, we see it as an enlightned Body only, but are ignorant

ignorant that 'tis a gross, solid Mass, very much like the Earth : On the other hand, the Earth having the ill luck to be seen by us too near, we consider it only as a great massy Body, fit only for the producing of Food for living Creatures. 'Tis just, said the *Marquiese*, as when we are struck and surpriz'd with the Splendour of Quality above our own; we do not perceive, that in the main, there's no difference between them and us. 'Tis just so, said I ; and we will needs be judging of every thing; but we have the misfortune, still to be plac'd in a false Light : Wou'd we judge of our selves, we are too near ; if of others, we are too far off : Cou'd one be plac'd between the Moon and the Earth, that wou'd be a true Station to consider both well : To this End, we ought only to be Spectators of the World, and not Inhabitants. I shall never be satisfy'd, said the *Marquiese*, with the Injury we do the Earth, in being too favourably engag'd for the Inhabitants of the Moon, unless you can assure me, that they are as ignorant of their Advantages, as we are of ours ; and that they take our Earth for a Star, without knowing that
the

the Globe they inhabit is one also. Be as-
 sur'd of that, Madam, said I, that the
 Earth appears to them to perform all the
 Functions of a Star: 'Tis true, they do
 not see the Earth describe a Circle round
 'em, but that's all one; I'll explain to you
 what it is: That side of the Moon which
 was turn'd towards the Earth at the be-
 ginning of the World, has continu'd to-
 wards the Earth ever since; which still
 represents to us these same Eyes, Nose
 and Mouth, which our Imaginations fan-
 sie we see compos'd of these Spots, Lights
 and Shadows, which are the Surface of
 the Moon: Cou'd we see the other half
 of the Moon, 'tis possible our Fancy wou'd
 represent to us some other Figure. This
 does not argue, but the Moon turns how-
 ever upon her own Axis, and takes as
 much time to perform that Revolution,
 as she does to go round the Earth in a
 Month. But then, when the Moon per-
 forms a part of her Revolutions on her
 own Axis, and that she ought to hide
 from us (for Example) one Cheek of
 this imaginary Face, and appear to us in
 another Position, she does at the same
 time perform as much of the Circle she
 describes

describes in turning round the Earth ; and tho' she is in a new Point of Sight or Opposition as to us, yet she represents to us still the same Cheek : So that the Moon, in regard to the Sun, and the other Planets, turns upon her own Axis ; but does not so as to the Earth.

The Inhabitants of the Moon see all the other Planets rise and set in the space of fifteen Days, but they see our Earth always hanging in the same Point of the Heavens. This seeming Immovability does not very well agree with a Body that ought to pass for a Planet ; but the truth is, the Earth is not in such perfection ; Besides, the Moon has a certain trembling Quality, which does sometimes hide a little of her imaginary Face, and at other times shews a little of her opposite Side ; and no doubt but the Inhabitants of the Moon attribute this shaking to the Earth, and believe we make a certain swinging in the Heavens, like the *Pendulum* of a Clock. All these Planets, said the *Marquiese*, are like us Mortals, who always cast our own Faults upon others : Says the Earth, *It is not I that turn round, 'tis the Sun* : Says the Moon, *It is not I that*

that tremble, 'tis the Earth : There are Errors and Mistakes every where. I wou'd not advise you, said I, to undertake to reform any of 'em; 'tis better that I make an end in convincing you, that the Moon is in all things like the Earth. Represent to your self these two great Globes, hanging in the Heavens; you know that the Sun does always enlighten one half of any Globe, and the other half is in the Shadow; there is therefore always one half of both Moon and Earth that is enlightned, or half Day, and the other half is still in the Darknes of Night. Be pleas'd, besides, to consider that a Ball has less force and swiftness after it re-bounds from a Wall, against which it was thrown, than it had before it touch'd the Wall, which sends it another way; so Light is not so strong, after 'tis reflected by any solid Body: This pale Light which comes to us from the Moon, is the Light of the Sun it self, but we have it only by Reflection from the Moon, and has lost a great deal of that Strength and Vivacity which it had when 'twas receiv'd by the Moon, directly from the Sun; and that bright and dazling
Light

Light which we receive from the Sun, must in the same manner appear to the Inhabitants of the Moon, after 'tis reflected by the Earth, on the Moon : So that the Surface of the Moon, which we see enlightned, and which shines upon us in the Night, is that half of the Moon that enjoys the Day, as that half of the Globe of the Earth which is enlightned by the Sun, when 'tis turn'd towards the darkned half of the Globe of the Moon, does give Light to the Inhabitants there, during their Nights. All depends upon the different Opposition and Aspects between the Moon and the Earth : The first and second Day of the Moon, we do not see her, because she is betwixt the Sun and us, and moves with the Sun by our Day ; it necessarily follows, that the half of the Moon which is enlightned, is turn'd towards the Sun, and the obscure part towards the Earth ; 'tis no wonder then, that we cannot see that half which is dark ; but that same half of the Moon which is in Darkness, being turn'd towards the enlightned half of the Earth, the Inhabitants see us, without being seen, and the Earth appears to them, as their

Full-Moon does to us ; and so, if one may use the Expression, 'tis with them Full-Earth. After this, the Moon going on in her Monthly Circle, dis-engages her self from the Sun, and begins to turn towards us a part of her enlightned half, which is the Crescent ; at the very same time, the darkned half of the Moon loses some share of the enlightned part of the Earth, and then the Earth is in the Wain, as to its Inhabitants.

Say no more, said the *Marquiese*, briskly, I shall know all the rest when I please ; I need only think a little, and follow the Moon in her Monthly Circle : I see in general, that the Inhabitants of the Moon have their Month, the exact Reverse of ours ; and I am perswaded, when 'tis Full-Moon, the enlightned half of it is turn'd towards the obscure part of the Earth, and then they do not see us, but a certain new Earth. I wou'd not have any Body reproach me with the want of so much Sence, as that you need explain so easie a thing to me. But as to the Eclipses, What is the Cause of them ? If you do not understand that, said I, 'tis your own Fault. When 'tis New Moon, and that she

she is between the Sun and the Earth, and that all her obscure half is turn'd towards us, who then enjoy the Day, you may see easily, that the Shadow of this darkned half is cast upon the Earth; if the Moon be directly under the Sun, this Shadow hides the Sun from us, and at the same time darkens a part of the enlightned half of the Earth, which was seen by the Inhabitants of the obscure half of the Moon: And this is an Eclipse of the Sun to us, in our Day; and an Eclipse of the Earth to those in the Moon, in their Night. When the Moon is at the Full, the Earth is betwixt her and the Sun, and all the obscure part of the Earth is turn'd towards the enlightned half of the Moon, the Shadow of the Earth is then cast upon the Moon; and if it falls directly on her Surface, it obscures the enlightned half which we see, and hides the Sun from that enlightned part of the Moon that enjoy'd the Day: This is an Eclipse of the Moon to us, during our Night; and an Eclipse of the Sun to them, during their Day. By this Reason, it falls out, that there are not always Eclipses when the Moon interposes be-

tween the Sun and the Earth, or the Earth is interjected between the Sun and the Moon ; because these three Bodies are not opposite one to another, in a streight Line ; and by consequence, that of the three, which ought to make the Eclipse, casts its shadow a little to one side of that which shou'd be eclips'd.

I am extreamly surpriz'd, said the *Marquiese*, that (since there is so little of Mystery or Difficulty in Eclipses) every body does not find out the Cause of 'em. Do not wonder at that, said I, Madam ; there are many Nations in the World, that, as they go to work, will not find it out for Ages to come ; for all over the *East-India's*, the Inhabitants believe, that when the Sun or Moon is eclips'd, certain Demons, or Spirits, who have very black Claws, do stretch them forth upon these two Luminaries, which he endeavours to sieze : and during the time of the Eclipse, you may see all the Rivers cover'd with Heads of *Indians* ; for they go into the Water, up to the Neck, thinking that most devout posture for obtaining from the Sun and Moon, a defence against that Demon. In *America*, the People were
perswaded,

perswaded, that the Sun and Moon were angry with 'em when they were eclips'd; and God knows what pains they are at, to make their Peace with 'em. But the *Gracians*, who were so polite a People, Did not they believe for a long time, that the Moon was bewitch'd, and that the Magicians made her come down, to throw a certain poisonous Scum or Dew upon the Herbs and Grass? And even we our selves, Were we not frightned out of our Wits at an Eclipse of the Sun, that happen'd about thirty Years since? Did not a great many People shut themselves up in Vaults and Cellars? And did not the learned Men write in vain, to assure us, there was no danger? Certainly, said the *Marquise*, that's very disgraceful to Mankind; and I think there ought to be a Law made by universal Consent, never to speak of Eclipses hereafter, lest the memory of such Folly shou'd be preserv'd to Posterity. Pray, Madam, said I, let there be another Law made, for abolishing the Memory of all things past; for I know of nothing, that is not a Monument of the Folly of Mankind. Pray, tell me, said the *Marquise*; Are the Inhabitants of the Moon

as much afraid of Eclipses as we are? It seems to me very ridiculous, that some of 'em shou'd run into the Water up to the Neck; that others shou'd think our Earth angry with 'em; some, that our Earth shou'd be bewitch'd, and that we are coming to spoil their Grass. Without all doubt, said I, Madam: Why shou'd the Inhabitants of the Moon have more Sense than we? And what Right have they to frighten us, more than we have to frighten them? Nay, more; I am apt to believe, that as there has been, and still are, many Inhabitants in our Globe, who are such Fools to adore the Moon; there are also Inhabitants in the Moon, foolish enough to adore our Earth. At that rate, said the *Marquise*, we may very well pretend to send Influences to the Moon, and to give a Judgment on their Distempers. But since there is only requisite, a little more Wit and Ingenuity in the Inhabitants of that Country, to blast the Honour we flatter our selves with, I confess, I am still apprehensive, they may have some Advantage over us. Do not fear, said I; there is no likelihood that we are the only Fools of the Universe. Ignorance

rance is naturally a very general Talent ; and though I do but guess at that of the Inhabitants of the Moon, yet I no more doubt of it, than I do of the most certain News we have from thence.

And what, pray, are these certain News you have from thence, interrupted she ? They are, said I, Madam, such as are brought us every Day by the Learned, who travel daily thither by the help of long Telescopes : They tell us, they have discover'd vast Countries, Seas, Lakes, high Mountains, and deep Valleys.

You surprize me, said the *Marquiese* : I know very well, that Mountains and Valleys may be discover'd in the Moon, by the remarkable Inequality we see in its Surface ; But how do they distinguish Countries and Seas ? Very easily, said I ; because the Water permits a part of the Light to pass through it, and reflects less, and appears, at a great distance, to be obscure Spots ; and that the Earth, which is solid, reflects the whole Light, and therefore must appear the brightest part of the Globe of the Moon. These different parts are all so well known, that they have given them all Names of lear-

ned Men : One place is call'd *Copernicus*; another, *Archimedes* ; and a third, *Gali-*
teus : There are too a *Caspian-Sea*, *Por-*
phory-Hills, and the *Black Lake*. In short,
 they have fram'd so exact a Description of
 the Moon, that a learned Man, if he were
 there, wou'd be in no more danger of lo-
 sing his Way, than I wou'd be, if I were
 at *Paris*.

But, reply'd the *Marquiese*, I shou'd be
 very well pleas'd to have a farther Ac-
 count of this Country. 'Tis impossible,
 reply'd I, that the nicest Observators
 shou'd inform you so well as *Astolpho*, of
 whom you ought to enquire; and who
 was conducted to the Moon by *St. John*.
 What I shall tell you now, is one of the
 most pleasant Fooleries in all *Ariosto*; and
 I am satisfy'd, 'twill not displease you to
 know it. I own, I ought not to meddle
 with *St. John*, whose Name is so worthy
 of Respect : But since there is a Poetical
 Licence, and Liberty of Conscience, it
 ought to pass as a Gayety. The whole
 Poem is dedicated to a great Church-man,
 and another great Church-man has ho-
 nour'd it with a signal Approbation; which
 one may perceive by the several Editions.
 See what he treats of.

Orlando,

Orlando Nephew to *Charlemain*, became mad, because the fair *Angelica* had proffer'd *Medora* to him; one day *Astolpho* the brave *Paladine*, found himself in a terrestrial Paradise, which was on the brink of a very high Mountain whither his flying Horse had carry'd him; there he met Saint——who told him that to cure the Madness of *Orlando*, 'twas necessary they shou'd take a Voyage to the Moon; *Astolpho* who desir'd nothing more than to see that Country, wanted no intreaties; and behold on a sudden a Chariot of Fire carry'd the Saint, and the *Paladine* through the Air. As *Astolpho* was no great Philosopher, he was much surpriz'd to see the Moon so vastly bigger than it had appeared to him upon the Earth, and was much more amaz'd to see Rivers, Lakes, Mountains, Plains, Groves, Towns, and Forests, (and that which wou'd have surpriz'd me also) beautiful Nymphs that hunted in those Forests. But that which he beheld yet more rare, was a Valley where he found all things that were lost on Earth, of what kind soever, Crowns, Riches, Renown, and Grandure, Infinity of hopes, time lost in waiting

waiting and depending on promising States-men, or thrown away at Play; the Alms that one causes to be given after ones Death; The Verses and Dedications one presents to Princes and the sighs of Lovers. As for the Sighs of Lovers, reply'd the *Marquiese*, interrupting me, I know not whether in the time of *Ariosto* they were lost or not, but in ours, I know of none that go into the Moon. Were there none but you Madam reply'd I, smiling, you have caus'd so many to sigh in vain, that you have made a considerable Treasure in the Moon: in short the Moon is exact in collecting all that is lost here below, and which are all to be found there, even to the Donation of *Constantine*. (But *Astolpho* told me this only in my Ear.) Besides all the Folly that was ever committed upon the Earth is well preserv'd there; these are so many Vials full of a subtil and penetrating Liquor, which easily evaporates as soon as opened, and upon every one of these Vials is writ the name of those to whom it belongs. I believe that *Ariosto* put 'em all in one Cup, but I had rather fantasie to my self that they were orderly plac'd

in

in one Gallery. *Astolpho* was very much astonisht to see the Vials of so many Persons whom he believed to be very wise, and yet notwithstanding their Vials were so very full; and for my part, I am perswaded that mine is as full as any, since I entertain you with Visions, both Philosophick and poetical. That which comforts me is, that 'tis possible by what I am perswading you to believe, I shall very suddenly make you have a Vial in the Moon as well as my self. The good *Paladine* did not fail to find his own among the Number, and by the Permission of the Saint, he took it and snuff'd up the Spirit as if it had been the Queen of *Hungary's* Water: But *Ariosto* said he wou'd not carry it far, and that it wou'd return to the Moon again by a Folly that he committed seven Years after: But he did not forget the Vial of *Orlando* which was the occasion of his Voyage; he had a great deal of difficulty to carry it, for the Spirit of this Hero was in its own Nature very heavy, and did not want a drop of being full. But here *Ariosto* according to the laudable Custom of speaking what he pleas'd, addressing himself to his Mistress,

speaks

speaks to her thus in good Verse. " That
 " I ought to cause one to mount the Hea-
 " vens, my fair one, to make me recover
 " the Senses your Charms have made me
 " lose, yet I will not complain of
 " this Loss, provided it does not go too
 " far, but if there be a Necessity that
 " your Cruelties must continue, as they
 " have begun, I have no more to do but
 " to expect just such a Fate as *Orlando's*;
 " however I do not believe, that to reco-
 " ver my Senses 'tis requisite I go through
 " the Air to the Moon; my Soul does not
 " lodge so high; it wanders about your
 " fair Eyes, and Mouth; and if you will be
 " pleas'd to give me leave to take it, per-
 " mit me to recover it with my Lips. Is
 not this witty for me to reason like
Ariosto? I am of opinion that a Man ne-
 ver loses his Wits but for Love; and you
 see they do not travel far, while their
 Lips only know so well how to recover
 'em. But when one loses 'em by other
 means (as we lose 'em by Philosophizing)
 they go directly to the Moon, and one
 cannot retrieve 'em when one pleases.
 In recompence of this, said the *Marquise*,
 our Vials shall be Honourable among the
 Ranks

Ranks of the Philosophers: For our Spirits will go on in wandering and erring on something that is worthy of 'em; but to accomplish this, and rid me of mine.

But pray tell me seriously, said the *Marquiese*, do you believe that there are Men in the Moon? For hitherto, you have said nothing to me positively as to that. I do not believe there are Men there, Madam, but some other odd sort of Creatures: Pray, Madam, consider but how much the Face of Nature is chang'd betwixt this and *China*; other Faces, other Shapes, other Manners, and almost quite different Principles of reasoning, from this to the Moon the difference ought to be more considerable. When one travels towards the new discovered World of *America*, &c. and finds the Inhabitants there to be hardly Men, but rather a kind of Brutes in humane shape, and that not perfect neither, so that could we travel to the Orb of the Moon, I do not think we should find Men and Women there. What kind of Creatures should we find then said the *Marquiese*, with a very impatient look? I swear I cannot tell, said I Madam, were it possible for us to be rational Creatures

tures and yet not Men, and that we inhabited the Moon, cou'd it ever enter into our Imagination, that there dwelt here below so extravagant an Animal as that of Mankind? Could we fancies to our selves any living Creatures with such foolish Passions, and so wise Reflections; of so small Duration, and yet can see so vast a Prospect beyond it; of so much knowledge in Trifles, and so much Ignorance of important things; so earnest for liberty, yet so enclin'd to servitude and Slavery; so very desirous of Happiness, and yet so incapable of attaining it; it wou'd require a great deal of Wit and Judgment in the Inhabitants of the Moon, to find the Reason and Mystery of such an odd composition; for we that see one another daily, have not as yet found out how we are made. It was said of old amongst the Heathens, that the Gods when they made Man were drunk with Nectar, whom when they had consider'd when sober, they cou'd not forbear laughing at the ridiculousness of their handy Work. We are then secure enough, said the *Marquiese*, that the Inhabitants of the Moon will never guess what we are; but I wish
we

we could attain to the knowledge of them; for I must confess it makes me uneasie to think there are Inhabitants in the Moon, and yet I cannot so much as fantasie what kind of Creatures they are. And why are you not as uneasie, said I, upon the account of the Inhabitants under and near the South-Pole, which is altogether unknown to us? They and we are carried as it were in the same Ship, they in the Stern, and we in the Head; and yet you see there is no communication between the Stern and the Head, and that those at the one end of the Ship do not know what kind of People they are on the other, nor what they are doing, and yet you would know what passes in the Moon, in that other great Ship sailing in the Heavens at a vast distance from us. Ah, said the *Marquiese*, I look upon the Inhabitants under the South-Pole, as a People known to us, because they are most certainly very like us; and that we may see them if we please to give our selves the trouble; they will continue still where they are, and cannot run away from our knowledge; but we shall never know what these Inhabitants

tants of the Moon are; 'tis that that vexes me. If I shou'd answer you seriously, said I, that we may one day know 'em, wou'd not you laugh at me? Nay and I shou'd deserve it: Yet I cou'd defend my self very well if I shou'd say so; there is a certain ridiculous thought in my Head, which has some shadow of likelihood, which satisfies me, tho I do not know on what it is founded, it being so impertinent as it is; yet I will lay you what you will, that I will oblige you to believe against all Reason, that there may one day be a correspondence between the Earth and the Moon. Reflect a little, Madam, upon the State and Condition of *America*, before it was discovered by *Christopher Columbus*; it's Inhabitants liv'd in a most profound Ignorance, so far from the knowledge of Sciences, that they were ignorant of the most simple and useful Art: They went stark naked and cou'd not imagine that Men cou'd be cover'd by Skins of Beasts; had no other Arms but Bows, and who look upon the Sea as a vast space forbidden to mankind, joining, as they thought, to the Sky; beyond which they saw nothing. 'Tis true;

true after having spent several years with hollowing the root of a great Tree with sharp Flints, they after ventur'd to go in this kind of Boat, which was driven along the Shore by the Winds and the Waves; but as this kind of Vessel was very subject to be over-set very often, they were necessitated to swim to catch their Boat again; and indeed, they did swim for the most part, except when they were weary. If any Body had told them there was a Navigation much more perfect than that they knew; and that by it, it was easie to cross that vast extent of Water to any side, and in what manner we pleas'd, and that it was possible to stop and lie still in the midst of the Waves, while the Vessel is in Motion; that Men cou'd move fast or slow as they pleas'd; and that the Sea, notwithstanding the vastness of its extent, was no hindrance to the commerce of distant Nations, provided that there were People on the other shoar; surely the *Indians* wou'd never have believ'd that Man that should have told 'em this, to them impossibility: nevertheless, the day came, that the strangest and least expected Sight that ever they saw, pre-

sented it self to their view, huge great
 Bodies, which seem'd to have whitewings
 with which they flew upon the Sea belch-
 ing Fire from all parts, and at last landed
 upon their shoar a Race of unknown Men,
 all crufted over with pollish'd Steel, or-
 dering and disposing at their Pleasure
 the Monsters that brought 'em thither,
 carrying Thunder in their Hands which
 destroy'd all that made any resistance, while
 the wondring *Indians* cried, from whence
 came they? who brought them over the
 Seas? who has given 'em the Power of
 Fire and Thunder? are they Gods or the
 Children of the Sun? for certainly, they
 are not Men. I know not, Madam, whe-
 ther you conceive as I do, the extraor-
 dinary surprize of these *Americans*, but
 certainly there was never any equal to it;
 and after that, I will not swear, but there
 may be one day, a commerce betwixt the
 Earth and the Moon: Had the *Americans*,
 any Reason to hope for a correspondence
 betwixt *America* and *Europe*, (which they
 did not know?) It is true, there will be a
 Necessity to cross the vast Extent of Air
 and Heaven that is betwixt the Earth
 and the Moon. But did these *Americans*
 think

think the Ocean more proper to be crof-
 sed, and pass'd through. Sure, said the *Mar-*
quiese, you are mad ; and looking earnest-
 ly on me ; I do not deny it, answer'd I ;
 nay, said she, it is not sufficient to confess
 it, I will prove you to be mad. The *A-*
mericans were so ignorant, that the Possi-
 bility of making a way or passage through
 the vast Ocean, cou'd never enter into
 their Thoughts ; but we that know so
 much, we easily find out that it wou'd
 be no hard matter to pass through the
 Air if we cou'd support our selves. There
 are those Men, said I, who have found
 out more than a possibility of it ; for they
 actually begin to fly a little, and several
 have made and fitted wings to them-
 selves, and invented a way to give them-
 selves Motion, for supporting the Body
 in the Air, for crossing of Rivers, and fly-
 ing from one steeple to another. 'Tis
 true, these were not flights of an Eagle ;
 and it has cost some of these new Birds a
 Leg or an Arm : But this Essay is like the
 first Planks that were carry'd on the Wa-
 ter, which yet gave beginnings to ship-
 ping ; and there was a very great diffe-
 rence between these Planks and Ships of

mighty burden; yet you see that time by degrees has produc'd great Ships. The Art of flying is but in its Infancy, time must bring it to Maturity, and one day Men will be able to fly to the Moon. Do you pretend to have discover'd all things, said she, or to have brought them to that perfection that nothing can be added? Pray, Madam, said I, by consent, let us save something for the Age to come. I will never yield, said she, that Men will ever be able to fly without breaking their Necks. Well, said I, Madam, since you will needs have Men always to fly so ill, it may be the Inhabitants of the Moon will fly better, and will be fitter for that Trade; for 'tis all one, if we go to them or they to us. And we shall be like the *Americans*, who did not believe Navigation possible, when at the same time, sailing was so well understood on the other half of the Globe. Sure, said she, in anger, the Inhabitants of the Moon wou'd have been with us before now, if that were likely. Pardon me, said I, Madam, the *Europeans* did not sail to *America*, till after six thousand years, all that time was requisite for performing Navigation. The Inhabitants

habitants of the Moon, it may be, at that time, knew how to make little Journeys in the Air, and are now practising ; and it may be when they have more skill, we shall see 'em. And God knows what a strange Surprise 'twill be to us. This is insupportable, said the *Marquise*, to banter me on thus with such frivolous Arguments. If you anger me, said I, I know what I have to say to enforce 'em, and make all good. Observe, Madam, how the World is daily more and more unfolded. The Ancients believed the torrid and the frozen Zones uninhabitable for extremity of cold or heat : And the *Romans* confin'd the general Map of the World to their own Empire, which carry'd as much of Grandure as Ignorance. But we know that there are Inhabitants both in these extreme hot, and extreme cold Countries ; by this the World is much augmented. Then it was believed, that the Ocean cover'd all the Earth, except what was inhabited : And that there was no *Antipodes* ; for the Ancients never heard of them : Besides they cou'd not believe Men cou'd have their Feet opposite to ours, with their Heads hang-

ing down ; and yet after all this the *Antipodes* are discover'd, the Map of the World is corrected, and a new half added to the World. You understand my meaning, said I, Madam ; these *Antipodes* which have been discover'd contrary to all Expectation, ought to make us more circumspect in judging by appearances: The World, and secrets of Nature will be daily more and more discover'd ; and at last we may come to know somewhat more of the Moon. Certainly, said the *Marquise*, looking earnestly on me, I see you so charmed with this Opinion, that I doubt not but you believe all you say. I shou'd be very sorry to find my self so, said I ; my endeavour is only to show, that chimerical Opinion may be so far defended by strength of Argument, as to amuse a Person of your Understanding and Sense, but not to perswade: Nothing but truth it self has that Influence ; even without the Ornaments of all its convincing Proofs ; it penetrates so naturally into the Soul, that one seems but to call it to mind ; tho' it be the first time that ever one heard of it. Now you ease me, said she, for your false way of arguing did confound

confound and incommode me, but now I can go sleep soundly ; so, if you please, let us retire.

The Third Night.

MY Lady *Marquiese* wou'd needs engage me to pursue and continue our Discourse by Day-light ; but I told her, 'twas more proper to reserve our Fancies and Notions till the Night ; and since the Moon and Stars were the Subjects of our Conversation, to trust it only to them. We did not fail to go that Evening into the Park, which was now become a place consecrated to our Philosophical Entertainment. I have a great deal of News to tell you, said I : The Moon, which I told you last Night (by all appearance) was inhabited, now I begin to think, may be otherwise ; for I have been reflecting upon a thing, which puts its Inhabitants in great danger. I shall never suffer that, said the *Marquiese* ; for you having prepar'd me last

Night, put me in hopes to see these People arrive one Day upon our Earth ; and to day, you will not allow them a being in the Universe : You shall not impose upon me at this rate. You made me believe there were Inhabitants in the Moon ; I have overcome all the Difficulties my Reason suggested to me against that Opinion, and now I am resolv'd I will believe it. You go too fast, said I, Madam ; one ought to give but one half of ones Thoughts and Belief to Opinions of this nature, reserving the other half free for receiving the contrary Opinion, if there be occasion. I am not to be deluded, reply'd the *Marquiese*, with fair Words ; let us come to the subject matter in debate : Must not we reason the same way of the Inhabitants of the Moon, as we did of your *St. Denis* ? Not at all, Madam, answer'd I ; the Moon does not so much resemble the Earth, as *St. Denis* does *Paris*. The Sun draws from the Earth, Waters, Exhalations and Vapours ; which ascending into the Air, to a certain height, are gather'd together, and form Clouds ; these Clouds, hanging in the Air, move regularly round our Globe, and over-shadows

dows sometimes one Country, sometimes another : And if it were possible for any one to see and consider the Earth at a great distance, he wou'd perceive great Changes as to the appearance of its Surface ; for a great Country, cover'd with Clouds, wou'd appear to be a very obscure part of the Globe, and will become clear and enlightned as soon as these Clouds dis-appear ; and one wou'd see these obscure places change their Situation, meeting together in different Figures, or disappearing all together. We shou'd see therefore the same Changes upon the Surface of the Moon, were it encompass'd with Clouds, as the Earth is ; but on the contrary, all the Obscurities, or dark places, as also those parts that are enlightned, are still the same, fix'd to the same Situation ; without Variation or Change ; there lies the difficulty : And for this reason, the Sun draws no Vapours or Exhalation from the Globe of the Moon ; and by consequence, 'tis a Body infinitely harder, and more solid than our Earth, whose subtile parts are easily separated from the rest, and mount upward, being once set in motion by the heat of
the

the Sun : So that the Moon must needs be nothing else but a vast heap of Rocks and Marble, from which no Vapour can be exhal'd ; which Vapours are so essential and natural to Waters, that 'tis impossible the one can be without the other. Who can then be the Inhabitants of those Rocks that produce nothing ? Or what living Creatures can subsist in a Country without Water ? How ! cry'd my Lady *Marquiese* ; Have you forgot that you asur'd me, there were Seas in the Moon, which we cou'd distinguish from hence ? That's only a Conjecture, said I ; and I am very sorry that these obscure places, that may be taken for Seas, are, possibly, nothing else but deep Caverns, and vast Cavities ; and guessing is pardonable, at the great distance we are at from the Moon. But, said she, is that sufficient to make us reject the Inhabitants of the Moon ? Not altogether, Madam, said I ; nor must we absolutely declare either for 'em, or against 'em. I confess my weakness, said she ; I am not capable of such Indifference, and I must be positive in my Belief ; therefore let us free our selves of one Opinion ; let us either preserve the
Inhabitants

Inhabitants of the Moon, or annihilate 'em for ever, never to be heard of again; but, if possible, let us preserve 'em, for I have an Inclination and a Kindness for 'em, I wou'd not willingly lose. I shall not unpeople the Moon then, Madam, said I, but for your sake shall restore to it its Inhabitants: And the truth is, that by the Appearance of the obscure and enlightened places of the Moon, which are still the same, without change, we have no reason to believe that there are any Clouds surrounding it, which might obscure sometimes one place, sometimes another; but yet that does not argue, but she may emit Vapours and Exhalations: Our Clouds which we see carry'd in the Air, are nothing but Exhalations and Vapours, which are separate in Particles, too small to be seen; which meeting with cold Airs, as they ascend, by it are condensed, and render'd visible to us, by the Re-union of their Parts; after which, they become thick and black Clouds, which float in the Air, as Stranger-Bodies, till at last they fall upon the Earth in Rain: But sometimes it falls out, that the same Vapours and Exhalations are extended,

tended, and kept from joining together, and so are imperceptible, and are only gather'd together so far as to form a kind of small Dew, so very subtile, that it cannot be seen as 'tis a-falling. It may be, in like manner, that the Vapours which proceed from the Moon (for certainly it emits Vapours ;) and 'tis impossible to believe, that the Moon can be such a Body, as that all its parts shou'd be of an equal Solidity, and so equal a temper, one with the other, that they are incapable of receiving any Change, by the attracting and moving Influence of the Sun upon 'em: We know no Body of this nature, the hardest Marbles are not of this kind ; and there is no Body, how hard and solid soever, but is subject to Change and Alteration, either by secret and invisible Motion in it self, or by some exterior Impulse it receives from another. It may be therefore, as I said, the Vapours which arise from the Moon are not gather'd together, as a rounded Surface, into Clouds, but fall gently upon it again in insensible Dews, and not in Rain : And 'tis sufficient to demonstrate this, to conjecture only, that the Air which environs the Moon, is as different

ferent from the Air that environs the Earth, as the Vapours of the Air from the Exhalations of the other ; which is more than likely to be true ; and it must follow, that Matter being otherwise dispos'd of in the Moon, than in the Earth, its effects shou'd also be different ; and imports nothing, whether it be an interior Motion of the parts of the Moon, or the Production of external Causes, which furnish it with Inhabitants, and them with a sufficient Food for their Subsistence ; so that, in our Imagination, we may furnish 'em with Fruits and Grain of several sorts, Waters, and what else we please ; for Fruit, Grain and Water, I understand, are agreeable to the nature of the Moon, of whose Nature I know nothing ; and all these proportion'd and fitted to the Necessities of the Inhabitants, of whom I know as little. That is to say, said the *Marquiese*, that you only know, that all is very well there, without knowing in what manner ; that is a great deal of Ignorance, with a little Knowledge ; but we must have patience : However, I think my self very happy, you have restor'd the Moon its Inhabitants again ;
and

and I am very much pleas'd, you have surrounded it with Air of its own ; for without that, I shou'd think a Planet too naked.

These different Airs, answer'd I, hinder the Communication and Commerce of these two Planets : If flying wou'd do the business, what do I know, but we might come to perfection in that Art I discours'd of last Night. I confess, Madam, there seems but little likelihood of what I say, since the great distance between the Moon and the Earth makes the difficulty so hard to overcome, which is very considerable ; but tho' it were not, and that the Earth and the Moon were plac'd near one another, yet it wou'd not be possible to pass from the Air of the Earth, to the Air of the Moon. The Water is the Air and Element of Fish, who never pass into the Air and Element of Birds ; 'tis not the distance that hinders 'em, but 'tis because every one of 'em are confin'd to the Air which they breath. We find that our Air is mix'd with Vapours, that are thicker and grosser than those of the Moon ; and by consequence, any Inhabitants of the Moon, who shou'd arrive
upon

upon the Confines of our World, wou'd be drown'd and suffocated as soon as they enter'd into our Air, and we shou'd see 'em fall dead upon the Earth.

Oh, but I shou'd be glad, cry'd the *Marquiese*, that some great Ship-wreck, occasion'd by a mighty Tempest, wou'd throw a good many of these People upon our World, that we might at leisure consider their extraordinary Shape and Figure. But, answer'd I, if they had Skill enough to sail upon the external Surface of our Air, and that from thence they shou'd catch us, like Fish, out of a Curiosity of seeing us; wou'd that please you, Madam? Why not, said she, laughing? I wou'd go of my self into their Nets, to have the satisfaction of seeing those that had caught me. Consider, said I, that you wou'd be very weak and feeble, before you come to the Surface of our Air; for we cannot breath it in all its Extent, and we can hardly live on the Tops of high Mountains; and I wonder that those who are so foolish as to believe, that Corporeal Geniuses inhabit the purest Air, do not tell us why these Geniuses visit us so seldom, and stay so short a while:

while: I do believe, 'tis because few amongst 'em know how to dive; and that even those who are skilful in that Art, have great difficulty to penetrate the grossness of the Air which we breath. You see therefore, that Nature has set many Bars and Fences, to hinder us from going out of our World, into that of the Moon. However, for our Satisfaction, let us conjecture and guess as much as we can of that world: For Example; I fancies that the Inhabitants of the Moon must see the Heavens, the Sun, and the Stars, of a different Colour than what they appear to us. All these Objects we see through a kind of natural Perspective-Glass, which changes them to us; this Perspective-glass of ours is mix'd with Vapours and Exhalations, which do not ascend very high. Some of late pretend, that the Air of it self is blew, as well as the Water of the Sea; and that that Colour is not apparent in the one, nor the other, but at a great depth: The Heavens, say they, in which are plac'd the fixed Stars, has of it self no Light; and by consequence, ought to appear black: But we see it through our Air, which is blew; and therefore the
Heavens

Heavens appear of that Colour. If it be so, the Beams of the Sun and Stars cannot pass through the Air, without taking a little of its Tincture, and at the same time lose as much of their own natural Colour : But supposing the Air had no Colour of it self, 'tis certain, that a Flambeau, seen at a distance, through a thick Fog, appears of a reddish Colour, tho' that be not natural to it ; so all our Air, which is nothing else but a thick Fog, must certainly alter the true natural Colour of the Heavens, Sun and Stars to us ; for nothing but the pure heavenly Substance is capable to convey to us Light and Colours, in their Purity and Perfection, as they are : So that the Air of the Moon is of another nature than our Air, or is, of it self, of an indifferent Colour ; or, at least, is another Fog, changing, in appearance, the Colours of the Celestial Bodies. In short, if there be Inhabitants in the Moon, they see all things chang'd, through their Perspective-glasses, which is their Air.

That makes me prefer our place of Habitation, said the *Marquiese*, to that of the Moon ; for I cannot believe, that the mix-

ture of the Heavenly Colours is so fine there, as it is here. Let us suppose, if you will, the Heavens of a reddish Colour, and the Stars of a greenish, the Effect wou'd not be half so agreeable as Stars of Gold, upon a deep Blue. To hear you speak, said I, one wou'd think you were fitting of Furniture for a Room, or chusing a Garniture for a Suit of Cloths: Believe me, Nature is very ingenious, therefore let us leave to her Care the finding out a Mixture of Colours agreeable to the Inhabitants of the Moon; and I assure you, 'twill be perfectly well understood; she certainly has not fail'd of changing the Scene of the Universe, according to the different Situation and Position of the Beholders, and still in a new and agreeable way. I know the Skill of Nature perfectly well, said Madam the *Marquiese*; and she has spar'd her self the pains of changing her Objects, as to the several Points from whence they may be seen, and has only chang'd the Perspective-glasses, through which they are seen; and has the Honour of this great Variety, without the Expence: She has bestow'd on us a blue Heaven, with a
blue

blue Air; and it may be, she has bestow'd upon the Inhabitants of the Moon, a Heaven of Scarlet, with an Air of the same Colour, and yet their Heaven and ours is one and the same: And it seems to me, that Nature has given every one of us a Perspective-glass, or Tube, through which we behold Objects in a very different manner, one from the other. *Alexander* the Great saw the Earth as a fine place, fit for him to form a great Empire upon: *Celadon* only look'd upon it, as the Dwelling-place of *Astræa*: A Philosopher considers it as a great Planet, all cover'd over with Fools, moving through the Heavens: And I do not see that the Object changes more from the Earth to the Moon, than it does here from one Man to another.

The Change of Sights is more surprising to our Imagination, said I; for they are still the same Objects we see at different Views; and it may be, in the Moon they see other Objects than we see; at least, they do not see a part of those we see: Perhaps in that Country they know nothing of the Dawning of the Day, of the Twi-light before Sun-rising, and after Sun-setting; for the Beams of the Sun,

at these two times, being oblique and faint, have not strength to penetrate the grossness and thickness of the Air, with which we are environ'd ; but are receiv'd and intercepted by the Air, before they can fall upon the Earth, and are reflected upon us by the Air ; so that Day-break and Twi-light are Favours of Nature which we enjoy by the by, or, as it were, by chance, they not having been destin'd for us ; but 'tis likely that the Air of the Moon, being purer than ours, is not so proper and fit for reflecting the faint Beams of the Sun before its Rising, and after its Setting ; therefore I suppose, the Inhabitants of the Moon do not enjoy the favourable light of the *Aurora*, or Dawning ; which growing stronger and stronger, does prepare us for the glorious Appearance of the Sun at Noon ; nor the Twi-light, which becoming more faint by degrees, we are insensibly accusom'd to the Absence of the Sun : So that the Inhabitants of the Moon are in profound Darkness, when on a suddain a Curtain is drawn, as it were, and their Eyes are dazl'd with the Rays of the Sun, and they enjoy a bright resplendent Light ; when
by

by a suddain motion, as quick as the former, down falls the Curtain, and instantly they are reduc'd to their former Dark-ness: They want those *Mediums*, or Inter-fices, which join Day and Night together (and which participates of both) which we enjoy. Besides, these People have no Rain-bow; for as the Dawning is an Effect of the thickness of our Air, so the Rain-bow is form'd upon Exhalations and Vapours, condens'd into black Clouds, which pour down Rain upon us, by divers Reflections and Refections of the Sun-beams upon these Clouds: So that we owe the Obligation of the most agreeable and pleasant Effects, to the ugliest and most dis-agreeable Causes in Nature: And since the Purity of the Air of the Moon deprives it of Clouds, Vapours and Rain, adieu to Rain-bow and *Aurora*: To what then can the Lovers in the Moon compare their Mistresses, without these two things?

I do much regret that loss, said the *Marquiese*, for in my Opinion, the Inhabitants of the Moon are fully recompens'd for the want of the Rain-bow, day-break and twi-light, since for the

same Reason, they have neither Thunder
 nor Lightning, both which are produc'd
 by Clouds and Exhalations ; they enjoy
 bright serene Days, and never lose the Sun
 by Day, nor the Stars by Night. They
 know nothing of Storms and Tempest ;
 which seem to us the effects of the wrath
 of Heaven. And can you think their
 condition is so much to be lamented ?
 You, said I, Madam, represent the Moon
 as a most charming abode. Now me-
 thinks it should not be so desirous and a-
 greeable to have a burning Sun always o-
 ver ones Head, without the interposition
 of any Clouds to moderate its heat : And
 it may be for this Reason, Nature has sunk
 these Caverns in the Moon, which are
 big enough to be seen by our Telescopes :
 Who knows but the Inhabitants of the
 Moon, retire into these Cavities, when
 they are incommoded with the Excessive
 heat of the Sun, and it may be they live
 no where else, but build their Towns and
 Villages in these hollow places ? And do
 not we know that *Rome*, which is built
 under ground, is almost as great as the
 City above ground ? So that if we shou'd
 suppose, that the City of *Rome* above
 ground

ground shou'd be ras'd, and quite remov'd, *Rome* under ground wou'd then be just such a Town, as those I have imagin'd to be in the Moon. Whole Nations live in these vast Caverns; and I doubt not but there may be Passages underground, for the communication and commerce of one People and Nation with another. You are pleas'd to laugh, Madam, at my Fancy, do so with all my Heart, I agree you shou'd; and yet you may be more mistaken than I: For you believe, that the Inhabitants of the Moon dwell upon the Surface of their Globe, as we do on that of the Earth; it is very likely that 'tis just the contrary; for there is most certain, a vast difference between their way of living and ours. No matter, said the *Marquiese*, I cannot resolve to suffer the Inhabitants of the Moon to live in perpetual Darkness. You wou'd be harder put to it, Madam, said I, if you knew that a great Philosopher of old, believ'd the Moon to be the abode and dwelling of the Souls who had merited Happiness by their good Life in this World; and that theit Felicity consisted in hearing the Harmony of the

Spheres as they turn'd round, and that they were depriv'd of this heavenly Musick, as often as the Moon was obscur'd by the Shadow of the Earth; and that then these Souls roar'd and cry'd out as in despair, and that the Moon made haste to recover her Light again, to bring the Souls out of that Affliction. At that rate, said she, we shou'd see the bless'd Souls come from the Moon to us; for why shou'd not the Earth be to the Moon, as the Moon is to the Earth, since according to the opinion of your Philosopher, there was no other Felicity for the Souls of the blessed, than to be transported from one World to the other? Seriously, said I, Madam, 'twould be a great Pleasure and Satisfaction to see several different Worlds; and I am often glad, to make these Journeys in Imagination; what joy then it wou'd be to do it in reality; that wou'd be far better than to travel from hence to *Japan*, crawling as it were with difficulty from one point of this Globe to another, and still to see nothing but Men and Women over and over again. Well, said she, what hinders, but we shou'd make a Journey through the Planets

nets as well as we can ? Let us by imagination place our selves in several Positions, and situations, fit for considering the Universe. Have we no more to see in the Moon? No, said I, at least, I have shown you all I know. Going out of the Moon towards the Sun, the first Planer you meet with is *Venus* ; and here I must again make use of my former Simile of *Paris* and *St. Denis*. *Venus* turns round the Sun on her own *Axis*, as the Moon does round the Earth ; and by the means of Telescopes, we discover that *Venus* waxes and wanes, being sometimes altogether enlightned, and sometimes darkened according to her different Positions in respect to the Earth.

By all appearance the Moon is inhabited, why shou'd not *Venus* be so, as well as she ? Ay, but interrupted the *Marquise* by your *why not's*, you will people all the Planets. Do not doubt of it, Madam, answer'd I ; why has not Nature sufficient to give Inhabitants to 'em all ? We see that all the Planets are of the same Nature, that they are all *Opaque* solid Bodies, having no Light but what they receive from the Sun ; which they send
one

one to another by Reflection, and that they have all the same kind of motion ; thus far equal, and after all this must we conceive that all these vast Bodies were made not to be inhabited ? And that Nature has made only an exception in Favour of the Earth, he that will believe this, may, but for my part I cannot. I find you, said the *Marquise*, very resolute and settled in your opinion of a sudden : A little while ago, you wou'd scarce allow the Moon to be inhabited ; and seem'd to be very indifferent, whether it were so or not ; whereas now, I am confident, you wou'd be very angry with any body that shou'd tell you that all the Planets were not inhabited. It is true, Madam, in the minute wherein you have surpriz'd me, had you contradicted me, as to the Inhabitants of all the Planets, I wou'd not only have defended my opinion, but have proceeded, to have given you an exact description of all the several Inhabitants of the Planets. There are certain Moments of believing things ; and I never so firmly believ'd the Planets to be inhabited, as in that Moment I spoke of 'em ; but now, after cooler Thoughts, I shou'd

shou'd think it very strange, that the Earth
 shou'd be inhabited as it is ; and the o-
 ther Planets shou'd be so entirely desolate
 and deserted: For you must not think, that
 we see all the living Creatures that inha-
 bit the Earth. For there are as many several
 species and kinds of Animals invisible,
 as there are visible. We see distinctly
 from the Elephant to the Mite ; there our
 sight is bounded, and there are infinite
 numbers of living Creatures lesser than a
 Mite, to whom, a Mite is as big in pro-
 portion, as an Elephant is to it. The
 late invention of Glasses call'd Micro-
 scopes, have discover'd thousands of small
 living Creatures, in certain Liquors,
 which we cou'd never have imagin'd to
 have been there. And it may be the dif-
 ferent tastes of these Liquors, proceed
 from these little Animals, who bite, and
 sting our Tongues and Palates. If you
 mix certain ingredients in these Li-
 quors, (as Pepper in Water,) and expose
 'em to the heat of the Sun, or let 'em
 putresce, you shall see other new
 species or living Creatures. Several Bo-
 dies, which appear to be solid, are no-
 thing else but Collections or little heaps
 of

of these imperceptible Animals ; who find there as much room, as is requisite for them to move in. The leaf of a Tree, is a little World inhabited, by such invisible little Worms: To them this leaf seems of a vast Extent, they find Hills and Valleys upon it : And there is no more Communication between the living Creatures on the one side, and those on the other, than between us and the *Antipodes*. And I think there is more reason, to believe a Planet(which is so vast a Body) to be inhabited. There has been found in several sorts of very hard Stones, infinite multitudes of little Worms, lodg'd all over them in insensible varieties ; and who are nourish'd upon the Substance of these Stones which they eat. Consider the vast Numbers of these little Animals, and how long a tract of Years they have liv'd upon a grain of Sand. And by this Argument, tho my Moon were nothing but a confus'd heap of Marble Rocks, I wou'd rather make it be devour'd and consum'd by its Inhabitants, than to place none at all in it.

To conclude, every thing lives, and every thing is animated ; that is to say, if
you

you comprehend the Animals, that are generally known; the living Creatures lately discover'd, and those that will be discover'd hereafter, you will find that the Earth is very well Peopl'd; and that Nature has been so liberal in bestowing them, that she has not been at the pains to discover half of 'em. After this, can you believe, that Nature, who has been fruitful to Excess as to the Earth, is barren to all the rest of the Planets? My Reason is convinc'd, said the *Marquiese*, but my Fancy is confounded with the infinite Number of living Creatures, that are in the Planets; and my thoughts are strangely embarrass'd with the variety that one must of Necessity imagine to be amongst 'em; because I know Nature does not love Repetitions; and therefore they must all be different. But how is it possible for one to represent all these to our Fancy? Our Imaginations can never comprehend this variety, said I, let us be satisfied with our Eyes, or we may easily conceive by an universal view, Nature has form'd variety in the several Worlds. All the Faces of Mankind are in general near the same Form. Yet the two great Nations

tions of our Globe, the *Europæans* and *Africans*, seem to have been made after different Models. Nay, there is a certain resemblance and Air of the Countenance peculiar to every Family or Race of Men. Yet it is wonderful to observe how many Millions of Times, Nature has varied so simple a thing as the Face of a Man. We, the Inhabitants of the Earth, are but one little Family of the Universe, we resemble one another. The Inhabitants of another Planet, are another Family, whose Faces have another Air peculiar to themselves; by all appearance, the difference increases with the distance, for cou'd one see an Inhabitant of the Earth, and one of the Moon together, he wou'd perceive less difference between them, than between an Inhabitant of the Earth, and an Inhabitant of *Saturn*. Here (for Example) we have the use of the Tongue and Voice, and in another Planet, it may be, they only speak by Signs. In another the Inhabitants speaks not at all. Here our Reason is form'd and made perfect by Experience. In another Place, Experience adds little or nothing to Reason. Further off, the old know no more than the young. Here

we trouble our selves more to know what's to come, than to know what's past. In another Planet, they neither afflict themselves with the one nor the other; and 'tis likely they are not the less happy for that. Some say we want a sixth Sense by which we shou'd know a great many things we are now ignorant of. It may be the Inhabitants of some other Planet have this advantage; but want some of those other five we enjoy; it may be also that there are a great many more natural Senses in other Worlds; but we are satisfi'd with the five that are fal'n to our Share, because we know no better. Our Knowledge is bounded to certain limits, which the Wit of Man cou'd never yet exceed. There is a certain point where our Ingenuity is at a stand; that which is beyond it is for some other World, where it may be some things, that are familiar to us, are altogether unknown. Our Globe enjoys the Pleasure of Love; but is destroyed in several places by the fury of War. Another Planet enjoys constant Peace, without the delights of Love, which must render their Lives very irksom. In fine, Nature has done to the several Worlds

Worlds in great, as she has done to us Mortals in little; by making some happy, others miserable. Yet she has never forgot her admirable Art in varying all things, tho she has made some equal in some respects, by compensating the want of any one thing, with another of equal value.

Are you satisfi'd, said I, Madam, very gravely; have not I told you Chimeras in abundance? Truly, I find not so much difficulty to comprehend these differences of Worlds; my Imagination is working upon the Model you have given me And I am representing to my own Mind odd Characters and Customs for these Inhabitants of the other Planets. Nay more, I am forming extravagant shapes and figures for 'em: I can describe 'em to you; for I fancies I see 'em here. I leave these shapes, said I, Madam, to entertain you in Dreams this Night, to morrow, we shall know, if they have assisted you, to describe the Inhabitants of some other Planet.

The Fourth Night.

THE Dreams of my Lady *Marquiese* were not lucky, they still represented to her something like what we see on Earth ; so that I had as much reason to reproach her, as certain People have to blame us when they see some of our Pictures ; for they being ignorant of drawing, and designing, and pleasing themselves with their extravagant and grotesque Figures, tell us, our Pictures are nothing but Men and Women, and that there is no Fancy in 'em ; there was therefore a necessity of laying aside all sorts of the Forms and Figures of those Animals that inhabit several Planets, and to rest satisfy'd by guessing as well as we can, in pursuing our Journey, which we had begun, through the several Worlds of the Universe.

We were at *Venus* : And there is no doubt, said I to my Lady *Marquiese*, but *Venus* turns upon her own Axis, but 'tis not known in what time, and by consequence, we know not the length of her

H Days,

Days, but her Years must consist but of eight Months, since *Venus* turns round the Sun in that space of time. As *Venus* is forty times less than the Earth, the Earth must necessarily appear to the Inhabitants of *Venus*, to be forty times bigger than *Venus* appears to us; and as the Moon is also forty times less than the Earth, by consequence, it must appear to the Inhabitants of *Venus*, about the same bigness that *Venus* appears to us.

You afflict me, said the *Marquise*, extremely; I see very well, that our Earth is not that happy Planet to the Inhabitants of *Venus*, as she is to us; for our Globe of the Earth must appear too big to the Inhabitants of *Venus*, to be the Fountain of Love, but the Moon, which appears to the World of *Venus*, of the same size that *Venus* appears to us, is exactly cut out to be the Source of their Amours, and the lucky Star of their Intrigues; which Titles are most agreeable to the pretty, clear, twinkling Planets, which have in 'em a certain Air of Gallantry. 'Tis certainly a happy Fate for our Moon to give Laws to the Loves of the Inhabitants of *Venus*: No doubt, but these People

ple are very soft, and have the Art to please extreamly well. Without dispute, Madam, said I; the very Mobile of *Venus* are all made up of *Celladons* and *Silvanders*, and their most ordinary Conversations excel the finest in *Clelia*; the Climate being more favourable to Love: *Venus* being nearer the Sun than we, receives from its Influence a brighter Light, and a more enlivening Heat. I perceive very well, interrupted the *Marquise*, what kind of People the Inhabitants of *Venus* are; they are, like our *Moors* of *Granada*, a sort of little Sun-burnt Gentlemen, always in Love, full of Life and Fire, given to making Verses, and great Lovers of Musick, and every Day inventing Feasts, Balls and Masquerades, to entertain their Mistresses. Pray, Madam, said I, you are very ill acquainted with the Inhabitants of *Venus*; for our *Moors* of *Granada* are, in respect to them, as the Inhabitants of *Lapland*, or *Greenland*, for Coldness and Stupidity.

But what then must the Inhabitants of *Mercury* be, for they are yet more near to the Sun? They must certainly be mad, by having too much Light and Fire; and

I believe they have no more Memory, than the most part of our *Negroes*; they never think, and are void of all Reflection, and they only act by Chance, and by sudden Impulses. In short, the Planet *Mercury* must certainly be the *Bethlem* of the Universe; they see the Sun a great deal bigger than we do, because they are so much nearer to it; he darts upon 'em so strong a Light, that if the Inhabitants of *Venus* were here, they wou'd take our finest Days for the Remains of a faint Twi-light; and it may be, the Light we enjoy, wou'd not serve them to distinguish one Object from another; and the Heat they are accusom'd to is so excessive, that the greatest warmth enjoy'd by the Inhabitants of the middle of *Africk*, wou'd frieze them to death. Their Year lasts but three Months; the length of their Day is yet unknown, *Mercury* being so little a Planet, and so near the Sun, in whose Rays he is so continually lost, that he is hitherto scarce discoverable by the Art and Skill of Astronomers, who cou'd never yet get so much hold of *Mercury*, as to observe the Time in which he performs his Revolution upon his own Axis

or

or Centre ; but the smallness of his Planet perswades me 'tis in a very short time, and then, by consequence, his Days are very short, and his Inhabitants must see the Sun as a very great flaming *Brasier*, very near their Heads, which, to their Apprehension, moves with wonderful Rapidity ; this makes them so earnestly wish for the coming Night, which, no doubt, must be much more grateful to 'em than the Day ; and during those cooler Hours, they are enlightned by *Venus*, and by the Earth ; which two Planets must appear to them of considerable bigness. As for the other Planets, since they are remov'd further than *Mercury*, towards the Firmament, his Inhabitants must see them less than they appear to us, and receive but little Light from 'em, it may be, none at all ; the fixed Stars must appear less to 'em also, and they lose the sight of some of 'em entirely, which, in my Opinion, is a very great Loss ; for I shou'd be very sorry to see the vast arch'd Roof of the Heavens adorn'd with fewer Stars, or those I do see, appear less, and not so bright.

I am not so much concern'd for that Loss, said the *Marquiese*, as for their being so extreainly incommoded with excessive Heat ; and I wish with all my heart, we cou'd ease 'em of that Trouble. Let us therefore allow 'em long and continued Rain, to refresh 'em ; such as are in some of the hot Countries of our Earth, which fall for four Months together, during the hottest Seasons. That may be done, said I ; but we may find out another Remedy, to relieve the Inhabitants of *Mercury* ; for there are Countries in *China*, which, by their Situation, must be very hot ; yet notwithstanding, the Cold is so excessive during the Months of *July* and *August*, that the Rivers are frozen : The Reason is, These Climates abound with Salt-Petre (whose Exhalations being very cold) the force of the Heat draws out of the Earth in great abundance. Let us therefore suppose *Mercury* to be a little Planet, made of Salt-Petre ; and let the Sun extract out of himself a Remedy to his Disease which he gives to the Inhabitants. This is certain, that Nature produces no Animal, but in places where they may live ; and Custom and Use, joined

ned with Ignorance of what is better, supplieth all Defects, and makes Life agreeable ; for ought we know, the Inhabitants of *Mercury* want neither Rain, nor Exhalations of Salt-Petre.

After *Mercury*, you know, the next Planet we find in our Journey, is the Sun; and if we judge by the Earth (which is inhabited) that other Bodies of the same kind may be so too, we are mistaken, and the *Why not* will fail us here ; for the Sun is a Body of a quite different Nature from the Earth, and other Planets : He is the Source and Fountain of all that Light, which the other Planets do only reflect from one to another, after having receiv'd it from him ; and so they can exchange Light one with another, but are incapable of producing it : The Sun alone draws from it self this precious Substance, which he darts a-round him with great Force and Violence, and which is intercepted by every Body that is solid ; so that there is reflected from one Planet to another long streams and streaks of Light, which crossing and traversing each other in the Air, are interwoven a thousand different Ways, and so form a Mixture of

the richest substance in Nature : For this end the Sun is plac'd in the Centre, which is the Situation most proper and com-
 mode ; from whence he may equally dis-
 pence and distribute his Light and Heat,
 for the livening and enlightning all things
 round him. The Sun is therefore a Body
 of a particular Substance ; but what kind
 of Body, or what kind of Substance, is all
 the difficulty : Heretofore 'twas believ'd,
 that the Sun was a pure Fire ; but the Er-
 ror of this Opinion was found out in the
 Beginning of this Age, by Spots which
 were discover'd upon the Surface of the
 Sun ; as a little after that time, there were
 new Planets discover'd, of which I shall
 speak hereafter : The learned part of the
 World were full of nothing else but these
 new Planets ; and Discourses of 'em were
 so much in fashion, that they believ'd the
 Spots in the Sun were nothing else but
 these new Planets, moving round 'em,
 which necessarily hid a part of his Body
 from our sight, when their obscure Side
 was turn'd towards us. The learned Men
 of the World made their Court to most
 Kings and Princes, with these new disco-
 ver'd Planets ; giving the Name of one
 Prince

Prince to one, and of another Prince to another ; so that they were like to quarrel, to whom they shou'd belong.

I am not pleas'd with that at all, said the *Marquiese* : You told me the other Night, that the Philosophers and learned Men had given Names of Philosophers, Astronomers and Mathematicians to the several Countries of the Moon, and I was very well satisfy'd, and think it but just, that since the Kings and Princes possess the Earth, that they ought to suffer Philosophers and Astronomers to rule in the Moon and the Stars, without ineroaching upon 'em. What, said I, Madam, Will not you allow Kings and Princes some Corner of the Moon, or some Star, to take their part in time of need ? As to the Spots in the Sun, they can be of no manner of use to 'em ; for it has been found, they are not Planets, but Clouds of Smoak and Vapours, and, as it were, a Scum arising from the Surface of the Sun ; for sometimes they appear in great Quantities, sometimes in less, and at other times they dis-appear ; sometimes they join in one, and other times they are dispers'd and dissipated ; so that it shou'd seem,

seem, the Sun is a liquid Substance ; some
 say, 'tis of melted Gold, which boils in-
 cessantly, and produces those Impurities ;
 and by the force of its Motion, throws
 upon the Surface its Scum and Dross ;
 and as those consume, new ones are pro-
 duc'd. Pray, Madam, fantasie to your self
 what strange Bodies these Spots of the
 Sun must be ; there are some of 'em full
 as big as the Globe of the Earth ; judge
 then what a great quantity there must be
 of this melted Gold, and of the Extent of
 this vast Ocean of Light and Fire, which
 we call the Sun. They say, the Sun ap-
 pears, through Telescopes, to be full of
 great Mountains which vomit Flames,
 and that it is, as it were, a Million of
 Mount *Ætna's*, join'd together ; but at
 the same time they acknowledge that these
 Mountains may be altogether visionary,
 and that they are nothing else but the Ef-
 fects of the Glasses of the Telescopes.
 To whom shall we trust then, when these
 very Glasses, to which we owe so many
 new Discoveries, deceive us ? In fine,
 Let the Sun be what it will, it does not
 at all seem proper to be inhabited ; and
 yet 'tis pity, for the Situation wou'd be
 extreamly

extreamly fine ; its Inhabitants wou'd be plac'd in the Centre of the Universe, and wou'd see all the other Planets turn regularly round 'em, whereas we observe infinite Irregularities in their Course ; and 'tis only because we are not in a proper Situation to consider 'em, as not being in the Centre of their Motion. Is it not hard, that there is but one place in the Universe, where the Study of the Stars wou'd be easie, and that that place alone shou'd be uninhabitable ? You do not think, whilst you speak, said the *Marquiese*, were any living Creature in the Sun, he wou'd see neither Planets, nor fixed Stars ; nor, indeed, any thing ; the brightness of the Sun wou'd render all things else invisible ; and if there were Inhabitants in the Sun, they wou'd be apt to believe themselves the only People in Nature.

I confess, said I, I am mistaken, I consider'd only the Situation of the Sun, without the Effects of its Light. But, pray, Madam, allow me to tell you, that you who have corrected me so justly, may also be mistaken your self : The Inhabitants of the Sun wou'd not so much as see it self ; for they wou'd be incapable to support

support the dazzling of his Light, or unable to receive it, by being too near; and all things well consider'd, the Sun wou'd be a Country of blind Men only. So that, once for all, I conclude, the Sun cannot be inhabited; and if you please, Madam, we will continue our Journey to the other Worlds: We are now come to the Centre, which is the lowest Point in all Circular Figures; and therefore must return back again, and go upwards. In the Way, we shall find *Mercury*, *Venus*, the Earth, and the Moon; all which Planets we have visited.

The next that presents it self to our Observation is *Mars*, who contains nothing rare or curious that I know of: His Days are not a full Hour longer than ours, but his Years are double the length of ours. *Mars* is less than the Earth, and his Inhabitants see the Sun neither so big, nor so bright as we do. In short, *Mars* is not worthy the pains of a longer Discourse; but 'tis very curious to observe *Jupiter*, and his four Moons, or Guards: they are four little Planets, which turn round *Jupiter*, as our Moon turns round us. But, says the *Marquiese*, interrupting,

ing me, why are there some Planets attending upon others, who, it may be, are no better than themselves? In my Opinion, it wou'd be more regular and uniform if all the Planets, great and small, had but one Motion round the Sun. Ah, Madam! said I; if you understood the *Tourbillions*, or Whistlings of Monsieur *DesCartes*, whose Name is so terrible, and *Idea's* so agreeable, you wou'd not talk at that rate. Let my Brains turn round, said she, laughing, if they will; I long to know what these *Tourbillions* are; make haste therefore to satisfy me, I'll manage my self no longer, but henceforth abandon all my Thoughts to Philosophy, without Reserve, let the World talk what they please; but let me understand these Whirlings. I did not think you capable of such Transports, said I, Madam; and I am sorry they have not a fitter Object. But to satisfy you, a *Tourbillion* is a heap of Matter, whose parts are disjoin'd one from another, yet moving round all one way; each little part being allow'd a particular Motion of its own, provided always they do not obstruct the general Circular Motion. As for Example; A

Tourbillion

Tourbillion of Air, call'd a Whirl-wind, or a Hurricane, is an infinite quantity of little Particles of Air, turning all round together, carrying along every thing they meet with in their way : You know that the Planets are carry'd round in the Celestial Matter, which is incredibly subtile and swift ; all that vast Ocean, and Mass of Celestial Substance, which is between the Sun, and the Sphere of the fixed Stars, turns round, and carries with it the Planets one way, from East to West, round the Sun, which is plac'd in the Centre ; but in shorter or longer time, as they are distant or nearer the Centre, all things turn round, even the Sun it self ; but he turns round upon his own Axis : And you are to observe thus ; if the Earth were in the middle of the Celestial Matter, as the Sun is, she wou'd also turn round upon her own Axis, like that : This is that great *Tourbillion*, of which the Sun is, as it were, Governor ; but at the same time, all the Planets have little Whirlings peculiar to themselves, in imitation of that great one, the Sun ; notwithstanding, they are all carry'd round the Sun, yet every one of them turns round upon his own

own Axis, and sweeps along with him a share of the Celestial Substance, which yields easily to any Impulse of Motion it receives, provided that does not obstruct its general Motion round the Sun; and this is call'd the particular Whirling, or *Tourbillion* of a Planet, which extends as far as the Sphere of its Activity can reach; and if it falls so out, that any lesser Planet than that which governs the *Tourbillion* comes in its way, 'tis carry'd with it, and indispensably forc'd round it; but yet that does not hinder both the greater Planet, and the lesser, with their Whirlings, to turn round with the great *Tourbillion* of the Sun. 'Twas thus that, after the Creation of the Universe, the Earth carry'd the Moon round it self, because the Moon fell within the Extent or Sphere of Activity, and forc'd its Obedience. *Jupiter*, of whom I have said somewhat already, was happier or stronger than we; there fell four little Planets in his Neighbourhood, and he subdu'd 'em all four: Our Earth, which is now a chief Planet, had it fallen within the *Tourbillion* of *Jupiter*, you may easily believe he wou'd have forc'd us to have turn'd round him

him also, *Jupiter* being ninety times bigger than our Earth; and then we had been nothing but a Moon depending upon *Jupiter*, whereas now the Earth has a Moon of her own turning round her: So true it is, that Chance of Situation has decided our Fortune. Pray, what Assurance have we, said the *Marquiese*, that our Earth shall always remain in the same Situation? I am afraid we may make a Trip one Day or other, towards some Planet as dangerous as *Jupiter*, who may sweep us round with it self; or that some other stronger Planet may approach nearer to us; for I fantasie, that the violent Motions of the heavenly Matter you speak of, may agitate and shake the Planets so irregularly, that it might sometimes bring 'em nearer together, and at other times remove 'em farther from one another. We might gain rather than lose by that Bargain, said I; for it may be, our Earth wou'd be carry'd near *Venus* and *Mercury*, which are little Planets, and cou'd not resist ours: But we have nothing either to hope or fear from such an Accident; the Planets must remain where they are, new Conquests are forbid

bid them, as they were heretofore to the Kings of *China*. You know very well, when one mixes Oil and Water together in a Vessel, the Oil will swim above; and if you throw any very light thing into the Vessel, the Oil will support it, and it will not penetrate into the Water: Throw in any other thing, somewhat heavier, of a proportionable weight to penetrate the Oil, which is too weak to stop it; 'twill fall upon the Water, and swim, the Water being sufficiently strong to bear it up. So that this Vessel, full of two Liquors, which does not mingle together two Bodies of an unequal weight, rests naturally in two different Positions, the one above the other; so as the lightest can never descend, the heaviest can never ascend. If you add other Liquors that will not mingle together, and throw as many Bodies into 'em of proportionable weight, 'twill still be the same thing. Imagine to your self, that the Celestial Substance which fills the vast *Tourbillion*, or Whirling of the Sun, is compos'd of different Coats, wrapp'd within one another, like an Onion; these Coats are of different weights and force, as Oil and Water, and other

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Liquors.

Liquors. The Planets also are of different weights; and by consequence, every one of the Planets must stop upon that Coat proportionable to its weight, and which has necessary strength for supporting it, and keeping it in an equal Balance; and you will perceive it is not possible in Nature they can remove from thence.

I understand very well, said the *Marquise*, how these different Weights are regulated, according to their several degrees: Wou'd to God, there were some such Order amongst us Mortals, to confine every Man to the Station that is fit for him. I am now no longer in fear of *Jupiter*; I am satisfy'd that he will leave us at ease in our own little Whirling, or *Fourbillion*; I am easily pleas'd, and do not envy *Jupiter* his four Moons.

You wou'd be to blame if you shou'd, said I; for he has no more than what is necessary for him; considering the great distance he is from the Sun, his Moons receive and reflect but a very faint Light. 'Tis true, that *Jupiter* turns upon his own Axis in the space of ten Hours, his Nights are but four Hours long; and being so short, one wou'd think he had no great need of four Moons:

Moons: But you must consider, in our Earth, under the North and South Poles, there are six Months of Day, and six Months of Night; because the two Poles being the two Points of the Earth, remotest from those Countries and Places, upon which the Sun darts his beams directly, and over which, to our Apprehensions, he seems to perform his Course: The Moon holds, or appears to us to hold the same Road with the Sun: So that if the Inhabitants near the South and North Poles see the Sun during one half of his yearly Course, and then lose his Light during the other half, it must follow, that they see the Moon during one half of her monthly Revolution, and lose her during the other half; that is, for the space of fifteen Days. One of *Jupiter's* Years is twelve of ours, and there must be two opposite Poles in that Planet where there are Days and Nights of six Years long a-piece. A Night of six Years long is very long, and I believe these four Moons were chiefly created for that reason: The highest of the four, as to *Jupiter*, performs its Course round him in seventeen Days, the second in seven Days, the third in three

Days and an half, and the fourth in forty two Hours. These Revolutions being thus divided by equal halves in these unhappy Climates, where there are six Years of continued Night, one and twenty Hours cannot pass without their seeing appear, at least, the last of the four Moons; which is a very great satisfaction, during so long and irksome a Darknes: But upon whatever place of *Jupiter* you shou'd inhabit, these four Moons wou'd represent to your view one of the most agreeable Sight in Nature: Sometimes they rise all four together, then they separate according to the inequality of their Motions; sometimes they see 'em over their Heads, directly above one another; at other times they see 'em appear above their Horzion, at equal distances; at another time, two of the four are rising, when the other two are setting; but above all, I shou'd be pleas'd to see their constant Eclipsing one another, or the Sun; for there passes no Day, without one of the two; and since Eclipses are so familiar to that World, they must certainly be a Divertisement to them, whereas they frighten the Inhabitants of our Earth.

And

And you will not fail, I hope, says the *Marquiese*, to bestow Inhabitants upon these four Moons, though they be little, inferior Planets, and only made to enlighten the Inhabitants of a greater, during their long Nights. You need not doubt of it, said I, Madam ; these four Planets are no less deserving of Inhabitants, because they are so unhappy as to be subject to, and turn round a more important Planet. I wou'd, says the *Marquiese*, have the Inhabitants of these four Moons to be Colonies of *Jupiter*, and receive their Laws and Manners from thence, and pay Homage and Respect to *Jupiter*, and not to look upon that great Planet, but with Veneration. And wou'd you not also, said I, have these four Moons to send Ambassadors, from time to time, to the Inhabitants of *Jupiter*, and swear Fealty to him ? For my part, we having no Authority over the Inhabitants of our Moon, makes me think that *Jupiter* has no more over the Inhabitants of his four ; and I believe, one of the Advantages he has most reason to brag of, is, that he frightens 'em. For Example ; The Inhabitants of that Moon next to *Jupiter*, see him three hun-

dred and sixty times bigger than our one Moon appeareth to us : And as I believe that little Moon to be much nearer to *Jupiter* than Ours is ; so his greatness must be by that considerably augmented ; and they must constantly see that monstrous Planet hanging over their Heads, at a very small distance. And if it be true, that the *Gauls* of old, apprehended the falling of the Heavens : The Inhabitants of that Moon have more Reason to fear the falling of *Jupiter*. It may be, said she, they have that fright, instead of that of the Eclipses, which you told me, they are free from ; and which must be supply'd by some other piece of Folly. It must be so infallibly, said I, Madam, for the great inventor of the third System, of which I spoke to you the other Day, the *Tichy-Brabe* one of the greatest Astronomers that ever liv'd, was far from fearing Eclipses as the Vulgar do ; but instead of that, he fear'd, if the first he met (as he went out of his House in the Morning) were old, or if a Hare happen'd to cross his way, he instantly return'd home, shut himself up, and did believe that day to be unlucky ; nor wou'd he dare to attempt

tempt Business of the smallest Consequence.

It is not just, said the *Marquiese*, that since that great Man was not free from the Fear of Eclipses for nothing, that the Inhabitants of that little Moon, shou'd come off at an easier rate: Let us give 'em no Quarter, but force 'em to submit to the common Law of Nature, and oblige 'em to yield to some other Folly. But since I will not trouble my self to guess at this time, what that may be, pray solve me one difficulty, which my Fancy has just now suggested; if the Earth be so little, in respect of *Jupiter*; does the Inhabitants of *Jupiter* see our Earth? I am afraid we are altogether unknown to 'em. Really, I believe it to be so, said I, for the Inhabitants of *Jupiter* must see the Earth ninety times less than *Jupiter* appears to us; which is too small to be perceiv'd by them; and all we can imagine for our advantage, is, to suppose that there are Astronomers in *Jupiter*, who after having taken a great deal of Pains, and fitting excellent Telescopes; and having chosen a very clear Night for making the Observation, they at last discover in the

Heavens a little Planet, they had never seen before ; and straight they set it down in the Philosophical Transactions of that Country. The rest of the Inhabitants of *Jupiter*, either never hear of it, or laugh at it if they do ; the Philosophers themselves whose Opinion that discovery destroys, resolve not to believe it ; and there are but some very rational People, that will trouble themselves with the thoughts of it. These Astronomers make new Observations ; they again look upon this little Planet , and they begin to be assur'd that it is no Fancy but a real thing ; then they begin to conclude, this little Planet has a Motion round the Sun ; and after a thousand Observations, they at last find out that this Motion or Revolution, is performed in a Years time. So that, thanks to these learned Men, the Inhabitants of *Jupiter* know our Earth is a Planet and a World : The Curious are earnest to look on it through a Telescope ; tho 'tis so little , 'tis hardly discoverable.

If it were not, said the *Marquiese*, very disagreeable for me to believe, that our Earth is not to be perceiv'd by the Inhabitants

habitants of *Jupiter*, but by the help of a Telescope, I shou'd find an Infinite Pleasure in imagining, I shou'd see those Telescopes pointing towards us ; and ours from a mutual Curiosity are levell'd at them, whil'st those two Planets gravely considering one another, the Inhabitants of both ask at one and thesame time, What World is that ? What People are those?

Don't go so fast, Madam, said I ; suppose, the Inhabitants of *Jupiter*, cou'd see our Earth; yet, they cou'd never see us, or so much as suspect our Earth to be inhabited; or if any Body were Fool enough to imagine it, God knows, how he wou'd be laugh'd at and ridicul'd by the rest of the Inhabitants. And it may be, we are the Cause, that some Philosophers in that World have been sued and persecuted for this Opinion : However, I believe, that the Inhabitants of *Jupiter* are employed enough in the discovery of their own Planet , without troubling themselves with the thoughts of us. And had *Christopher Columbus* been of that Country, and understanding Navigation so well, he cou'd not have wanted employment.

And

And the People of that World know not the hundredth part of its own Inhabitants ; whereas, in *Mercury* (which is a very little Planet) they are all Neighbours one to another, and converse familiarly together ; and they esteem it, as but a Walk to go round their little World ; and if the Inhabitants of *Jupiter* do not see us, you may easily judge, they can far less perceive *Venus* and *Mercury*, both which are more diminutive Worlds, and further distant from it than we : But in lieu of this, they see *Mars*, and there are four Moons, and *Saturn* with the five that belong to him. There are Planets enough, to perplex all the Astronomers there : And Nature has had the goodness to hide from em what remains of the Universe.

What, said the Lady *Marquise*, do you look upon that as a Favour ? Without doubt, said I, Madam, there is in this great *Tourbillion* or whirling of the Sun, Sixteen Planets. And Nature, who is willing to save us the labour of studying all their Motions, has discover'd to us only seven of them ; and is not that a great Favour. But we who are not sensible

fible of this Grace, have so ordered the matter that by our Endeavours we have found out the other nine, which Nature had conceal'd from us, and we are sufficiently punish'd for it, by the great Pains and Labour, which is at present requisite for the Study of Astronomy.

I see, answer'd she, by the number of sixteen Planets, that *Saturn* must have five Moons. He has so, said I, Madam, and two of the five are discover'd very lately, but there is yet something more remarkable in that Planet; for his Year is as long as thirty of ours; and consequently there are Climates in that World, where one Night lasts for fifteen Years together. Can you guess what Nature has intended for the enlightning of Nights so long and dreadful? She was not satisfied to bestow on *Saturn* five Moons; but has also given him a great Circle or Ring, which environs him entirely, and which is elevated sufficiently high enough to be out of the shadow of this Planet. It reflects the Light of the Sun perpetually upon the Inhabitants of *Saturn*, who have the Misfortune to live in that Climate, that is, so long a time depriv'd of the influence of his Beams. Well,

Well, said the *Marquiese*, (with the Air of a Person return'd to herself from some great astonishment) all that you say is contriv'd with wonderful Order, and sure Nature has seen and provided for the necessity of some animate Beings; and that the distribution of these Moons, was not a work of Chance, since they are bestowed only upon these Planets, that are at a great distance from the Sun, the Earth, *Jupiter* and *Saturn*; for *Venus* and *Mercury* have no need on 'em; they enjoy but too much Light already; and their Nights are very short; and it may be the Inhabitants of this Planet esteem Night a greater benefit of Nature, than the Day it self. But hold, said Madam the *Marquiese*, it seems to me, that *Mars*, who is farther distant from the Sun than the Earth, ought to have a Moon too. I must confess, said I, Madam, he has none; but certainly, the Inhabitants of that Planet enjoy some other advantage, which supplies that defect. You have seen several bodies, both liquid and dry, which draw in the Light of the Sun; and afterwards shine and cast a light in the dark. It may be, that there are great

great Rocks very high ; which are naturally of such a kind of Substance , as to receive great Provision of Light in the Day time from the Sun, which they restore in the Night ; and if it be so, you cannot deny, but it must be a very pleasant Scene or Representation, to see all those Rocks from all Quarters begin to shine, as soon as the Sun is down , and make Magnificent Illuminations without Art or Expence. You know also that in *America*, there are certain Birds, which shine so in the dark ; that one may read by their Light, as well as by that of a Candle ; and who knows, but there are many of these Birds in the Planet *Mars*, which fly about and enlighten that World as soon as the Sun is set?

Your Rocks, and your flying Birds, said the *Marquiese*, do not at all satisfy me. I confess such objects wou'd be very pretty ; but since Nature has given so many Moons to *Saturn* and *Jupiter* ; 'tis a sign, that they are absolutely necessary as well to *Mars*. I shou'd have been glad that all the Worlds distant from the Sun, cou'd have had their Moons ; and that *Mars* might not have been so disagreeably excepted.

excepted. Oh! Madam, said I, if you think it worth your pains to make any further Progress in Philosophy, you must accustom your self to such Exceptions; in the best Systems, there are always some things that agree exactly; but there are other things, that one must adjust as well as one can, or leave them as they are, if there be no hopes to overcome the difficulty: Let us do so if you please with *Mars*; and since he is not favourable to us, say no more of him. And tell me if it wou'd not be strangely surprizing, if we were in the World of *Saturn*, to see above our Heads in the Night that great Ring in the form of a Semi-Circle, going from opposite Points of the Horizon; and which reflecting the Light of the Sun upon us, wou'd have the effect of a continu'd Moon. And shall we place no Inhabitants upon that great Ring, said the *Marquiese*, laughing? I answer'd her, that (tho in the Humour I was in, I was inclin'd to put Inhabitants every where) I confess, I dare not set any upon so irregular a Habitation; but for the five little Moons, there is no dispensing with them, for they must have Inhabitants.

Inhabitants. But some do imagine, that this Ring or great Circle is compos'd of Moons join'd very near together, having all an equal Motion, and turning one way, and that the five little Moons I spoke of, had only escaped out of this great Ring; what an Infinity of Worlds are there then in the *Tourbillion* or whirlings of *Saturn*, and yet whatever is the Cause, the Inhabitants of *Saturn* are miserable enough, notwithstanding the Assistance of this great Ring. 'Tis true, it gives them Light, but what kind of Light? Sure a very feeble one at that great distance from the Sun, where she her self appears to 'em, but as a little pale Star, a very faint heat and Light, so that if you wou'd carry some of the Inhabitants of *Saturn* to our coldest Countries, as *Green-Land*, or *Lap-Land*, you wou'd see 'em all of a sweat, and melt away with heat. You give me an *Idea* of *Saturn*, said the *Marquiese*, that makes me shiver with cold; whereas before you warm'd me as much with the descriptions you gave me of *Mercury*. There is a Necessity, said I, that the two Worlds that are at the extremity of this great *Tourbillion*, must be contrary
one

one to another in every thing. At that rate, said she, the Inhabitants of *Saturn* must be very wise; for you told me the Inhabitants of *Mercury* were down-right mad. If the People of *Saturn*, said I, be not wise, they are at least in all Appearance so, and are very flegmatick, they know not what it is to laugh; and who take a whole days time at least, to answer the most trifling Question: They wou'd have look'd upon the grave *Cato* the *Censor*, as too wild and youthful for their Conversation.

There is a thought come into my Head, said the *Marquiese*; all the Inhabitants of *Mercury* are verly lively, and the Inhabitants of *Saturn* extremely dull: Now upon our Earth, we have a mixture of both, some are very airy, and some as insipid: Does not that proceed from our being situate in the middle, between these two Worlds, that we participate so of the Qualities of both these Extremes; and there is no fixt settled Character of Mankind; some resemble the Inhabitants of *Mercury*, others of *Saturn*; and we are a mixture of all the several kinds of People, that inhabit all the other Planets? I like
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that *Idea* well enough, said I, we are of such an extravagant Composition, that one wou'd really believe, that we were collected and drawn together from all the other Worlds. And at this rate, 'tis very convenient to live in ours, since here we see an abridgement of all that can be seen in the other Worlds. At least, said the *Marquise*, Our World has one real advantage and conveniency, that it is neither so hot as *Mercury* or *Venus*, nor so cold as *Jupiter* and *Saturn*: And we have the good luck over and above, to be born in a Climate of this Earth, that has neither excess of heat nor cold. And if a certain *Philosopher* thank'd Nature for being a Man and not a Beast, a *Grecian*, and not a *Barbarian*; for my Part, I thank her, that I inhabit the most temperate Planet of the Universe, and the most temperate Climate of that Planet. If you will trust me, said I, Madam, you ought to thank her for being young, and not old, young and handsome, and not young and ugly, young, handsome, and a *French* Woman, and not a young and handsome *Italian*. You have abundance of other Reasons of Gratitude, than those

of the Situation of your *Tourbillion*, or the temperate Qualities of your Country. Good God, said she, suffer me to be grateful for every thing ; even to the very *Tourbillion* where I was born : The measure of the Happiness bestow'd upon us, is too little to lose any part of it ; and it is good to have such a Sense and Taste of the commonest and most inconsiderable things, as to turn all to our Advantage and Profit. If we shou'd look after no other Pleasure or Satisfaction, than this World afforded, we shou'd enjoy but very few, expect 'em long, and pay dear for 'em. If Philosophy be the Pleasure, you propose, said I, Madam, I have the Boldness to wish, that when you remember the *Tourbillions*, you wou'd be pleas'd to think of me. Yes, answer'd she, provided you take care your Philosophy furnishes me always with new Pleasures. At least, for to Morrow, answer'd I, I hope you shall not want ; for I have the fixed Stars prepared for you, which surpass all you have hitherto heard.

The Fifth Night.

MY Lady *Marquiese* was very impatient to know what shou'd become of the fix'd Stars. Can they be inhabited as the Planets are, said she to me? or are they not inhabited? what shall we make of 'em? If you wou'd take the Pains, you cou'd not fail to guess, said I, Madam, the fixt Stars cannot be less distant from the Earth, than fifty Millions of Leagues; nay, some Astronomers make the distance yet greater; that between the Sun and the remotest Planet is nothing if compared to the distance between the Sun or Earth, and the fix'd Stars; we do not trouble our selves to number 'em, their Lustre as you see is both clear and bright. If the fix'd Stars, receive their Light from the Sun, it must certainly be very weak and faint before it comes to 'em, having passed through a hundred and fifty Millions of Miles of the Celestial Substance, I spoke of before: Then consider, the fix'd Stars are oblig'd, to reflect this borrow'd Light upon us at the same distance, which

in reason must make that Light yet paler and more faint, it is impossible that this Light if it were borrow'd from the Sun, and not only suffer'd a Reflection, but pass'd through twice the distance of a hundred and fifty Millions of Miles, cou'd have that Force and Vivacity, that we observe in the fix'd Stars: Therefore I conclude they are enlightned of themselves; and are by consequence so many Suns. Do not I deceive myself, cry'd out the *Marquise*, do I see whither you are going to lead me? Are you not about to tell me the fix'd Stars, are so many Suns, and that our Sun is the Center of a great *Tourbillion* which turns round him; what hinders but a fix'd Star may be the Center of a *Tourbillion*, whirling or turning round it? Our Sun has Planets; which he enlightens, why may not every fix'd Star have Planets also? I have nothing to answer, but what *Phædra* said to *Oenone*, 'tis you that have hit it. But said she, I see the Universe to be so vast, that I lose my self, I know not where I am, and have conceived nothing all this while. What is the Universe thus divided into *Tourbillions*, confusedly cast together?

Is every fixt Star the Center of a *Tourbillion* ; and it may be full as big as our Sun ? Is it possible, that all this Immense space, wherein our Sun and Planets have their Revolution, is nothing but an inconsiderable part of the Universe ? And that every fix'd Star must comprehend and govern an equal space with our Sun ? This confounds, afflicts, and frightens me. And for my part, said I, it pleases and rejoices me ; when I believ'd the Universe to be nothing, but this great Azure Vault of the Heavens, wherein the Stars were placed, as it were so many golden Nails or Studs, the Universe seem'd to me too little and strait ; I fancied my self to be confin'd and oppress'd : But now when I am perswaded, that this Azure Vault has a greater depth and a vaster Extent, and that 'tis divided into a thousand and a thousand different *Tourbillions* or Whirlings, I imagine I am at more Liberty, and breath a freer Air ; and the Universe appears to me to be infinitely more Magnificent. Nature has spared nothing in her Production, and hath profusely bestow'd her Treasures upon a glorious Work worthy of her : You can represent

nothing so august to your self, as this prodigious Number of *Tourbillions*, whose Center is possess'd by a Sun, that makes the Planets turn round him. The Inhabitants of the Planets of any of these infinite *Tourbillions*, see from all sides the enlightned Center of the *Tourbillion* with which they are environ'd; but cannot discover the Planets of another, who enjoy but a faint Light, borrow'd from their own Sun, which it does not dart farther than its own Sphere or Activity. You show me, said the *Marquiese*, so vast a Prospect, that my sight cannot reach to the end of it: I see clearly the Inhabitants of our World; and you have plainly presented to my Reason the Inhabitants of the Moon, and other Planets of our *Tourbillion* or Whirling: After this you tell me of the Inhabitants of the Planets of all the other *Tourbillions*. I confess, they seem to me to be sunk into so boundless a depth, that whatever force I put upon my Fancy, I cannot comprehend 'em; and indeed you have annihilated 'em by the Expressions you made use of in speaking of 'em and their Inhabitants. You must certainly call 'em the Inhabitants
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of one of the Planets, of one of these infinite *Tourbillions*; and what shall become of us in the middle of so many Worlds; since the Title you give to the rest agrees to this of ours? And for my Part, I see the Earth so dreadfully little, that hereafter I shall scorn to be concern'd for any part of it. And I admire why Mankind are so very fond of Power, so earnest after Grandure, laying design upon design, circumventing, betraying, flattering, and poorly lying, and are at all this mighty Pains to grasp a part of a World they neither know nor understand, nor any thing of these mighty *Tourbillions*: For me, I'll lazily condemn it, and my carelessness shall have this Advantage by my Knowledge, that when any Body shall reproach me with my Poverty, I will with vanity reply, *Oh! you do not know what the fix'd Stars are.* I do believe, said I, Madam, that *Alexander the Great* himself did not know: For a certain Author who holds that the Moon is inhabited, says very gravely, that it was impossible, but *Aristotle* must be of so reasonable an Opinion (for how cou'd such a truth escape so great a Man as *Aristotle*?)

ristotle: But that he wou'd never say any thing of it for fear of displeasing *Alexander*; for had he known there had been a World which he cou'd not have conquer'd, it wou'd have reduc'd him to certain Despair. There was yet more Reason to conceal the *Tourbillions* of the fix'd Stars from him; if they had been known in those Days, he wou'd have made his Court very ill to that great Prince, who shou'd but have mention'd 'em. As for me who know 'em, I am very sorry I can draw no advantage from that Knowledge, which can cure nothing but Ambition and Disquiet, and none of these Diseases trouble me. I confess a kind of Weakness in Love, a kind of frailty for what is delicate and handsom, this is my Distemper, wherein the *Tourbillions* are not concern'd at all. The infinite Multitude of other Worlds may render this little in your Esteem, but they do not spoil fine Eyes, a pretty Mouth, or make the Charms of Wit ever the less: These will still have their true Value, still bear a price in spite of all the Worlds in the Universe.

It is a strange thing, said the *Marquiese* laughing, that Love saves himself from
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all Dangers, and there is no Systeme or Opinion can hurt him: But tell me frankly, are your Systemes certainly true? Do not dissemble, for I promise to keep it secret: I fantasie 'tis founded upon a very small bottom, a fix'd Star enlightned of it self, as the Sun is, and therefore it must be a Sun, the Soul and Center of the World having Planets turning round it as that also has. Is this absolutely necessary, says she? I fear, Madam, said I: Since we are always in the humour of mixing some little Gallantries with our most serious Discourses, give me leave to tell you, that Mathematical reasoning is in some things near a-kin to Love; and you cannot allow the smallest Favour to a Lover, but he will soon perswade you to yield another, and after that a little more, and in the end prevails entirely; so if you grant the least Principle to a Mathematician, he will instantly draw a consequence from it, which you must yield also, and from that another, and then a third, and maugre all your Resistance, in a short time, he will lead you so far, that you cannot retreat. These two sorts of Men, The Lover and Philosopher
always

always take more than is given 'em. You must acknowledge that when I see two Objects alike in every thing that I do see, I have Reason to believe them to be also alike in what I see not ; for where is the hindrance or difficulty ? From thence I have argu'd that the Moon is inhabited because it is like the Earth ; that the other Planets are inhabited because they are like the Moon. I find that the fix'd Stars are like our Sun as to what I see ; and therefore, I conclude they are Suns, and have Planets turning round about 'em ; and every thing else we attribute to our Suns. Now, Madam, you are too far engag'd to retire ; and therefore you must generously yield. By this rule of resemblance, said she, which you make betwixt our Sun and the fix'd Stars, the Inhabitants of another *Tourbillion*, must only see our Sun as a small fix'd Star, which only appears to them, during their Night. Without doubt, said I, Madam, our Sun is so near us, in respect of the Suns of the other *Tourbillions*, that his Light must have infinitely greater force upon our Sight than the Light of the other Suns ; when we see our Sun, we see
nothing

nothing else, his brightness makes all other things disappear : In another great *Tourbillion*, where another Sun governs, he in his turn removes and darkens our Sun, which does not appear, but in the Night as a fix'd Star amongst the other strange Suns (that is) fix'd Stars, and our Sun appears to the Inhabitants of that *Tourbillion* in the great Vault of the Heavens, as a Star of some Constellation, such as the Bear or the Bull : As to the Planets which turn round about him (as our Earth for example) since they cannot see it at so great a distance, they do not so much as think of it, so that all these Suns are Suns by day for the *Tourbillion* which they govern, and fix'd Stars by Night ; for all the other, every one of them is the only one of his kind in his own World ; but serve only to make up the Number of fix'd Stars for all the other Worlds. Notwithstanding, said she, of this Equality of Resemblance of the Worlds, yet I cannot believe, but they differ in a thousand things, for likeness upon the main does not hinder infinite little differences.

Most certainly, said I ; but the difficulty

culty will be, to find out those Differences. What do I know but in one *Tourbillion*, there are more Planets turning round it than in another? In one there are Inferior Planets turning round the greater, in another there are none at all; In one *Tourbillion* the Planets are gather'd together, as it were a little Party, round their Sun, and beyond them a vast Vacuity, extending to the next *Tourbillion*; in another, the Planets take their Course towards the Extremity of their *Tourbillion*, and leave a Void in the middle, and I do not doubt but there are *Tourbillions* destitute of Planets; and others, where their Sun is not plac'd in the middle, and yet has a free Motion, and carries his Planets round with him; others, where the Planets rise and fall in respect of their Sun, according to the Changes of the Counterpoise which balances 'em. What wou'd you have, Madam? Have not I said enough for a Man that was never out of his own *Tourbillion*?

No, said she, not for the quantity of Worlds which you say there is: What you have describ'd will suffice but for five or six, and I see thousands.

What

What wou'd you say, Madam, said I, if I shou'd tell you that there are infinitely more fixed Stars than those you see, that by the help of Telescopes an unaccountable number are discover'd, which we cannot see with our Eyes alone; and that in one Constellation, where we counted but twelve or fifteen fixed Stars, there have been discover'd more than we see with our Eyes in the whole Heavens? He to I ask your Pardon, said she; I yield and confess, you have over-charg'd me with Worlds and *Tourbillions*. Madam, said I, I have still a Reserve for you: You see that Whiteness in the Hemisphere, call'd *The Milky Way*; Can you imagine what it is? 'Tis nothing but an Infinity of little fixed Stars, which cannot be seen by our Eyes, because they are so very small, and are plac'd so near to one another, that they appear to be but one continued Whiteness: I wish you cou'd see this Ant-hill of Stars, and these Seeds of Worlds; they look like the *Maldevia*-Islands, or those twelvethousand little Isles, or Banks of Sand, separate only by small Canals of the Sea, which one may over-leap with as much Ease as a Ditch. So that these
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little *Tourbillions* of the *Milky Way*, being so near one to another, may converse and shake hands with those of their Neighbouring World ; at least, the Birds of one World may fly into another ; and they may teach Pidgeons to carry Letters, as they do in the *Levant*. By which, the Sun, in his own *Tourbillion*, as soon as he begins to spread his Light, he faceth that of all other Stranger-Suns ; for if you were in one of these little *Tourbillions* of the *Milky Way*, your Sun wou'd not be so near to you ; and by consequence, wou'd have but little more power, force, or influence upon your Eyes, than a hundred thousand other Suns of the neighbouring *Tourbillions* ; you wou'd then see your Heaven shining with an infinite number of Fires, very near to one another, and not far distant from you ; and tho' you shou'd lose the sight of your own Sun, you wou'd still have Light enough, and your Nights wou'd be no less bright than your Days ; at least, you wou'd not be sensible of the difference ; or, to speak more properly, you wou'd have no Night at all : The Inhabitants of this World, accustomed to perpetual Day, wou'd be strangely

ly surpriz'd if one shou'd tell 'em, that there are several People in the Universe, who are under the Tribulation of dismal, real Nights, and who fall into long and profound Darkneces, and who, when the Light returns, behold one and the same Sun: They wou'd look upon such People as the Out-casts of Nature, and the very Thoughts of our sad Condition wou'd sieze them with Horrour.

I do not ask you, said the *Marquiese*, whether there be any Moons in the World of the *Milky Way*; I see very well, that they wou'd be of no use to these Planets that have no Night; and who besides, move in too little Room to be troubled with an Equipage of inferior Planets. But do you know that by your multiplying upon me such a multitude of Worlds, you have started a great Difficulty to my Fancy, which, I doubt, you will hardly satisfy: The *Tourbillions*, whose Suns we see touch the *Tourbillions* where we are, and all the *Tourbillions* are round, how is it possible that so many different Globes can touch one single one? This I wou'd willingly understand, but find I cannot.

There's

There's a great deal of Sense, said I, Madam, in your proposing of this Difficulty, and no less in your not knowing how to solve it; for 'tis very judicious in it self, and unanswerable, as you understand it; and 'tis an Argument of very little Wit, to answer an Objection that is unanswerable. If our *Tourbillion* were in the shape of a Dy, it wou'd have six plain Superficies, and wou'd be very far from being round; yet upon every one of these six Superficies, or flat Sides, a *Tourbillion* might be plac'd, being of the same Figure: But instead of six flat sides, suppose it had twenty, fifty, or a thousand; then it were possible to place a thousand *Tourbillions* upon it, every Side bearing one; and you easily understand, that the more Superficies, or flat Sides any Body has, the nearer it approaches to a Globe: So a Diamond cut in Fossets on all sides, if those Fossets were very small, that Diamond wou'd be as round almost as a Pearl of the same bigness; the *Tourbillions* are only round in this sense, they are compos'd of an infinite number of flat Sides, and every one of 'em carries another *Tourbillion*: The flat Superficies are very unequal;

equal ; here they are big, there they are little ; the smallest Superficies of our *Tourbillion*, for Example, answer to the *Milky Way*, and support all those little Worlds ; but if two *Tourbillions*, that rest upon two neighbouring Sides or Faces, have any void space below between 'em (as that must fall out very often) Nature, who will lose nothing, and turns all her work to the best advantage, instantly fills up that Vacuity with one, two, or it may be a thousand little *Tourbillions*, which does not at all trouble or incommode the rest, and yet every one of these may have a World in it ; so that there may be more Worlds, than our *Tourbillion* has flat Sides to support : And I dare say, that although these little Worlds were only made to fill up Chinks of the Universe, which otherwise wou'd have been useless, and that they are altogether unknown to the other Worlds which touch them ; yet I doubt not but they are very well contented with their own Condition, and 'tis they whose little Suns we discover by the helps of Telescopes, whose number is so prodigious. In fine, all these *Tourbillions* are so rightly adjusted, and join'd to one another

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ther in so delicate a Form, that every one turns round his own Sun, without changing his Situation; every one takes that way of turning, which is most proper and commode to its place: They are fixed to one another like the Wheels of a Watch, assisting one another in their Motions, and yet moving contrary to one another. And 'tis said, that every World is like a Balloon, or Foot-ball, which swells and fills of it self, and which wou'd extend farther, if it were not hinder'd by neighbouring Worlds, who press it, and then it shrinks to its first form; after that, it swells a-new, and is again depress'd. And the Philosophers pretend, that the fixed Stars transmit to us a trembling Light, and an unequal Sparkling, because their *Tourbillions* push against ours, and ours against theirs.

I am extreamly in love, said the *Marquise*, with these *Idea's* you give me of the Balloons, which swell and fall every Moment; and those Worlds, which are always jostling together: But, above all, I am pleas'd to consider, that this Strife amongst 'em produces a Commerce of Light, which is the only Traffick they can have.

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No, no, said I, Madam; that is not the only Traffick; the neighbouring Worlds send Envoys sometimes to us, and that with a great deal of Splendor: We have Comets from thence too, who are always adorn'd with shining Hair, a venerable Beard, and a Royal Train.

Good God! said the *Marquiese*, laughing; What Ambassadors are these? We cou'd easily dispence with their Visits, for they do nothing but fright us. They fright only Fools and Children, Madam, said I; but of those Ignorants, I confess, there are a great number: The Comets are nothing but Planets which belong to some neighbouring *Tourbillion*, who make their Course toward the Extremity, or Out-side of it: But this *Tourbillion* being press'd by others that encompass it, 'tis rounder above than it is below, and it is from below that they appear to us. These Planets, which have begun to move in a Circle above, and not fore-seeing that their *Tourbillion* will fail 'em below, because it is, as it were, braz'd or squeez'd in that part; these Planets, which we call Comets, are necessitated, for the Continuance of their Circular Motion, to come

into another *Tourbillion*, which happens sometimes to be ours, making their passage through the Extremity of it : They all appear to us highly elevated, their Course being constantly above *Saturn*.

'Tis very necessary for the Defence of our System (for Reasons that do not at all relate to our present Subject) that there shou'd be a great vast space betwixt *Saturn*, and the Extremities of our *Tourbillion*, free from Planets. Our Adversaries do constantly reproach us with the unusefulness of this great Void ; but let 'em not trouble their Heads with that, for we have found an Use for it ; and it is the Appartment, or Chambers of State, where we receive the Stranger Planetary Ambassadors.

I understand you, said she, and am pleas'd with your Chamber of State ; for we do not permit 'em to come directly in the middle of our *Tourbillion*, but receive 'em as the Grand Seignior does his Foreign Ministers ; he does 'em not the Honour to lodge 'em in *Constantinople*, but sends 'em to the Suburbs. Madam, reply'd I, we agree with the *Turks* also in one thing more ; that is (as they) so we receive

receive Ambassadors, but send none ; for none of our Planets ever go to visit other Worlds. At this rate, said the *Marquiese*, we are very proud, yet I know not what to think of the matter ; these Stranger-Planets, with their long Tails and Beards, have usually but a scurvy threatening Look, and it may be they are sent to terrifie us ; whereas ours, not being made of that terrible Form, wou'd not be so proper to frighten People, were they sent into another World. These Tails and Beards, said I, are not real, but only Appearances, and these Stranger-Planets differ in nothing from ours ; but entring into our *Tourbillion*, they take a Tail, or a Beard from a certain kind of Illumination which they receive from the Sun ; which, as yet, is not fully explain'd amongst us. But let this be found out when it can, we now are sure it is nothing but a kind of Illumination, or false Light. I wish then, said the *Marquiese*, that our *Saturn* wou'd take a Tail, or a Beard, and go into some other *Tourbillion*, to frighten its Inhabitants ; and that afterwards, laying aside this terrible Equipage, he wou'd return, with the rest of our Planets, to his own place.

'Twill be better for him, said I, not to go out of our *Tourbillion*: I have told you already of the Encounter between two *Tourbillions* pushing against one another; and I believe, upon that occasion, a poor Planet is strangely shaken, and that his Inhabitants are not the better for it. We believe our selves very miserable when we see a Comet appear, but it is the Comet it self that is most unhappy. I do not believe that, said the *Marquise*, for it brings its Inhabitants to us in good health; and you know, nothing is wholesomer than Change of Air; As for us that never go out of our own, Life languishes but dully on. If the Inhabitants of a Comet had but the Skill to fore-see their Passage into our World, those who have already made that Voyage will tell these new Adventurers what they will see in their way: A Planet, say they, which has a great Ring round him, meaning *Saturn*; and then you will see another that has four little ones following him, and it may be that amongst them there are People set a-part, on purpose for observing the very Minute when they shou'd enter into our World, and who are instantly to cry out, *A new Sun!*

Sun ! A new Sun ! as our Mariners do,
Land ! Land ! after a long Sea-Voyage.
 I hope you will no longer pity the Inhabitants of a Comet ; but, no doubt, you will commiserate those who live in a *Tour-billion* where the Sun comes to be extinct, and leaves them in Eternal Night. What ! cry'd out Madam the *Marquiese*, Can Suns be extinguish'd ? Yes, said I, without dispute. The Ancients have seen fixed Stars in the Firmament, which we see no more ; these Suns have lost their Light : A great Desolation certainly for that *Tourbillion*, and a great Mortality for all the Inhabitants of its Planets ; for there is no living without a Sun. That *Idea*, said she, is too mournful ; Is there no way to pass it by ? If you please, said I, Madam, I'll tell you what very learned Men say ; that the fixed Stars which have disappeared are not however extinguished, but that they are *Half-Suns* ; that is to say, they have one side obscure, and the other enlightned ; and as they turn upon their own Axis, sometimes they present their enlightned half, and then we see 'em ; and sometimes their obscure half, and then we lose 'em. To oblige you,

Madam, I shall follow this Opinion, because 'tis more favourable than the other; but it must only be for certain Stars, who have regular Seasons of appearing and disappearing, as hath been discover'd; otherwise these Half-Suns cannot subsist. But what shall we say of Stars that disappear, and do not shew themselves again after the time in which they ought certainly to have perform'd the Revolution upon their own Axis? You are too just, Madam, to oblige me to believe that these Stars are Half-Suns; However, for your Satisfaction, I will endeavour to solve this Objection another way: Those Suns shall not be extinguish'd then, but shall only be sunk into the depth of the vast Heavens, which removes 'em from our sight; and in that Case, these Suns are follow'd by their *Tourbillions*, and all is well. 'Tis true, that the greatest part of the fixed Stars have no such Motion as carry them from us; if they had, they might as well approach more near us, and we shou'd see 'em sometimes bigger, sometimes less; which can never fall out: Let us therefore suppose that there are some little *Tourbillions* of less Light and Activity,

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which slide in among the others, and make certain Turnings ; after which, they come back again, whilst in the mean time the great *Tourbillions* remain where they did before ; and 'tis a strange Misfortune that there shou'd be certain fixed Stars which appear to us, and after a great deal of time of appearing and dis-appearing, entirely vanish, and are lost. In that time the Half-Suns, I spoke of, wou'd appear again, and Suns that were sunk into the Heavens wou'd dis-appear once, and not to appear again for a long time. Resolve well what to think, Madam, and take Courage ; there is a necessity that these Stars must be Suns, which grown obscure enough to be invisible to our sight, are afterwards enlightned, and in the end must lie extinguished. How ! said the *Marquise* ; Can a Sun be obscur'd, or entirely extinguish'd, who is himself the Fountain of Light ? The most easily in the World, said I, Madam : According to the Opinion of *Des Cartes*, our Sun has Spots ; let 'em be Scum or Vapours, or what else you will, these Spots may condense, and many of 'em may come together, and form a kind of Crust, which
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may afterwards augment, and then farewell the Sun and all its Light. 'Tis said, we escap'd once very hardly, for the Sun was grown extreamly pale for several Years together ; and particularly the Year after the Death of *Julius Cæsar*, it was that Crust that began to gather, and the Face of the Sun brake and dissipated it ; but had it continu'd, we had been all undone. You make me tremble, said the *Marquise* ; and now that I understand the Consequences of the paleness of the Sun, I shall henceforth every Morning, instead of going to my Looking-Glass to consult my own Face, go and look up to the Heavens to consider that of the Sun. Madam, said I, be assur'd there goes a great deal of time to ruin a World. Then, said she, there is nothing requisite but Time. I acknowledge it, Madam, said I ; all this vast Mass of Matter which composes the Universe, is in perpetual Motion, from which no part of it is entirely exempt ; and therefore Changes must come sooner or later, but always in Time proportionable to the Effect. The Ancients were foolish to imagine, that the Celestial Bodies were of an unchangeable Nature, be-
cause

cause they never saw any Change in 'em ; but they had neither Leisure nor Life long enough to undeceive themselves by Experience ; but the Ancients were young in respect of us. Suppose now, Madam, that the Roses, which last but for a Day, shou'd write Histories, and leave Memorials from one to another ; the first wou'd have describ'd the Picture of their Gardener of a certain manner ; and after fifteen thousand Ages of Roses, the others that had follow'd 'em wou'd have alter'd nothing in that Description of the Gardener, but wou'd have said, *We have always seen the same Gardener, since the Memory of Roses we have seen but him, he has always been as he is, he dies not as we do ; nay, he changes not, and certainly will never be other than what he is.* Wou'd this way of arguing of the Roses be good ? Yet it wou'd be better grounded than that of the Ancients, concerning Celestial Bodies ; and tho' there had never happen'd any Change in the Heavens to this Day, and tho' they shou'd seem to last for ever, yet I wou'd not believe it, but wou'd wait for a longer Experience ; nor ought we to measure the Duration of any thing by that of our own scanty

scanty Life. If a thing had a Being a hundred thousand times longer than ours, shou'd we therefore conclude it shou'd last for ever? Eternity is not so easie a matter; and some things must have pass'd many Ages of Men, one after another, before any sign of Decay had appear'd in 'em. I am not so unreasonable, said the *Marquiese*, as to consider the Worlds as things eternal, nor will I do them the honour to compare 'em to your Gardener, who liv'd so many Ages longer than the Roses: They are themselves but as a Rose, which are produc'd but in a Garden, that bud one Day, and fall the next; and as those Roses die, new ones succeed; so for some ancient Stars that dis-appear, other new ones are born in their places, and that Defect in Nature must be so repair'd, and no Species can totally perish. Some will tell you, they are Suns, which draw near to us after having been long lost in the depth of Heavens: Others will say, they are Suns that have cast off the Crust which began to cover them. If I cou'd easily believe all this, yet I shou'd believe also that the Universe was made in such a manner, that
new

new Suns have been, and may be form'd in it from time to time ; and what shou'd hinder the Substance proper to make Suns from gathering together, and producing new Worlds ? And I am the more inclin'd to believe these new Productions, since they are more correspondent to the great *Idea* I have of the glorious Works of Nature : And why shou'd not she who knows the Secret to bring forth and destroy Herbs, Plants and Flowers, in a continu'd Succession, practise also the same Secret on the Worlds, since one costs her no more Pains and Expence than the other. Indeed, says the *Marquiese*, I find the Worlds, the Heavens and the Celestial Bodies so subject to change, that I am altogether returned to my self. Let us return yet more, said I, and if you please, make this subject no longer, that of our Discourse ; besides you are arriv'd at the utmost bounds of Heaven ; and to tell you, that there are any Stars beyond that, were to make my self a wiser Man than I am, place Worlds there, or place none there, it depends upon your Will. These vast invisible Regions, are properly the Empires of Philosophers, which it
may

may be are or are not, as they themselves shall fanſie. 'Tis ſufficient for me to have carried your Underſtanding as far as your ſight can penetrate.

What, cry'd out the *Marquieſe*, have I the *Systemes* of all the *Univerſe* in my Head, am I become ſo learned? Yes, Madam, you know enough; and with this Advantage, that you may believe all or nothing of what I have ſaid, as you pleaſe. I only beg this as a Recompence for my pains, that you will never look on the Heavens, Sun, Moon or Stars, without thinking of me.

F I N I S.

Books lately Printed for W. Canning.

L A *Montre*; or, *The Lover's Watch*:
by Mrs. Behn.

The Lucky Chance; or, *An Alderman's Bargain*: A Comedy. By Mrs. Behn.

The Iſland-Princeſs; or, *Generous Portu-
gueſe*:

guesse : A Comedy. Altered by Mr. Tate.

An Historical and Geographical Account of the *Morea*, *Negropont*, and the Maritime Places, as far as *Theſſalonica* : Illustrated with forty two Maps of the Countries, Plains and Draughts of the Cities, Towns and Fortifications. Written in *Italian* by *P. M. Coronelli*, Geographer to the Republick of *Venice*. Engliſhed by *R. W. Gent*.

Geſta Grayorum ; or, The History of the high and mighty Prince, *Henry* Prince of *Purpoole*, Arch-Duke of *Stapulia* and *Bernardia*, Duke of *High* and *Nether Holborn*, Marquis of *St. Giles* and *Tottenham*, Count Palatine of *Bloomsbury* and *Clerkenwell*, Great Lord of the Cantons of *Iſlington*, *Kentiſh-Town*, *Paddington* and *Knights-bridge*, Knight of the moſt Heroical Order of the *Helmet*, and Sovereign of the ſame : Who reigned and died, *A. D.* 1594. Together with a Maſque, as it was preſented (by His Highneſs's Command) for the Entertainment of *Q. Elizabeth* ; who, with the Nobles of both Courts, was preſent thereat.

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Journal of Geographical Education

[Faint, illegible text]

1. The first part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them. The list includes names such as "John A. Smith", "John B. Smith", "John C. Smith", "John D. Smith", "John E. Smith", "John F. Smith", "John G. Smith", "John H. Smith", "John I. Smith", "John J. Smith", "John K. Smith", "John L. Smith", "John M. Smith", "John N. Smith", "John O. Smith", "John P. Smith", "John Q. Smith", "John R. Smith", "John S. Smith", "John T. Smith", "John U. Smith", "John V. Smith", "John W. Smith", "John X. Smith", "John Y. Smith", and "John Z. Smith".

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1. The first part of the document is a list of names and dates, which appears to be a record of some kind. The names are written in a cursive script, and the dates are in a more formal, printed style. The list is organized into two columns, with names on the left and dates on the right. The names are: John A. Smith, John B. Smith, John C. Smith, John D. Smith, John E. Smith, John F. Smith, John G. Smith, John H. Smith, John I. Smith, John J. Smith, John K. Smith, John L. Smith, John M. Smith, John N. Smith, John O. Smith, John P. Smith, John Q. Smith, John R. Smith, John S. Smith, John T. Smith, John U. Smith, John V. Smith, John W. Smith, John X. Smith, John Y. Smith, John Z. Smith. The dates are: 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457,

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1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

100

Hearing a Translation of the *Plurality of Worlds*, was doing by another Hand, the Translator had not the opportunity to supervise and correct the Sheets before they were wrought off; so that several *Errata* have escaped. The most material ones are under-written.

PAge 17. line 26. read *Piræum*. p.20.l.21. for Beams, r. Bodies. p.27. l.6. f.least, r.last. p.28.l.1. f.Circle, r.Earth. p.29.lult.f.Circle, r.Earth. p.30.l.13. f.every, r.any. p.32.l.1. f.as, r.its. p.34.l.6. f.hands, r.heads. p.36. l.28. for twenty, r.two or three. p.37.l.11. for twenty, r.two or three. p.38.l.17. del.to remove. p.44.l.20. r.Diaphanous. p.48.l.13. r.hath day. p.50.l.21. f.certain, r.say it is. p.65.l.17. f.Waves, r.Sea. l.18. f.vessel is, r.waves were. p.72.lult. r.irregularly. p.76. l.25. f.as a rounded, r.around her. p.77.l.2. f.Air, r.one. p.85. l.13. for Refections, r.Refracti- ons. ibid.l.25. after I do, add not. p.92. l.16. f.varieties, r.vacuties. p. 100.l.20. f.easts, r.lasts. p.106.l.23. f.effects, r.defects. p.109. l.8. r.or Whirlings. p.125.l.19. f.flying, r.shining. p.147. l.26. f.braz'd, r. em- barass'd. p.154.l.8. f. face, r. force or heat.